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**A critical analysis of outdoor learning experiences and the impact on pupil development and conceptual understanding**

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**Abstract**

Outdoor learning in education is an area that is difficult to ‘measure’ the benefits of. This paper is a critical analysis of outdoor learning experiences and aims to explore the impact opportunities may have on pupil development and children’s subsequent conceptual understanding. It provides an attempt to yield a better understanding of ‘experience’ as a key concept of learning and to ultimately find ways to better personal practice and enhance the opportunities for children to reach their potential. The results of this research suggest that outdoor learning is best utilised when supplemented with focused classroom learning, providing learners with multiple sources and styles of information to deepen their conceptual understanding. A clear connection between pupil and teacher enjoyment and their subsequent engagement was present in the data, culminating in significant leaps forward in understanding and learning, thus providing evidence to support the provision of as many outdoor and experiential learning opportunities for students as possible.

**Introduction**

Due to a significant lack of space, outdoor learning is a tool rarely harnessed in my school setting, which I am concerned may result in some missed benefits for the pupils. I wished therefore to critically observe the experiences of the children when outdoor opportunities are presented to them. I aimed to ascertain the potential impact it has on promoting pupil’s development and conceptual understanding (Alexander, 2008; Claxton, 2002) and used the Leuven Scale of motivation and engagement as a framework to assess this. Moreover, as part of this research I wanted to gain a better understanding of ‘experience’ as a key concept of learning (Waite, 2007; Kolb, 2015) and to ultimately find ways to better my own practice and enhance the opportunities I can provide for the children to reach their full potential.

**Literature Review**

Outdoor education can be defined as using places, other than the classroom, to facilitate teaching and holistic learning (Parliament. House of Commons, 2010; White, 2011). Within his exploration of experiential learning, Kolb cites Piaget’s theory that intelligence is “shaped by experience” (2015, p12), developed as a product of interaction between the user and their environment rather than as an inbuilt attribute (Kolb, 2015). Further, early pioneers included Froebel and McMillan, who used outdoor environments to impact on child development. Froebel (1782-1852; cited by Bilton, 2010) advocated the ‘kindergarten’ or ‘nursery garden’, as being central to nursery education. Influenced by Froebel, McMillan theorised that physical and emotional well-being, arguably essential prerequisites for intellectual development, can be fostered through outdoor learning (1911; cited by Bilton, 2010).

My own experiences align with this and certainly my own well-being has always been positively impacted by spending time outside. I believe I am not alone in this. The Countryside Alliance’s outdoor education campaign was cited, in which 97% of teachers surveyed believed it important for children to learn about the countryside and 85% of children and young people wanted to take part in countryside activities with their school (Parliament. House of Commons, 2010). However, I am concerned that my own preferences may colour my pedagogical practice and therefore research and reflection is vital. Certainly, research exists to suggest that children do benefit emotionally,

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psychologically and physically from spending time outside (Bilton, 2010; Waite, 2011), yet it is apparent in my own setting that children do not choose to or do not receive enough time outside. This has many implications; nationally, figures of obesity are on the increase, with one in three children in Year 6 measuring as obese or overweight (NHS Digital, 2017). For my school, a large barrier to outdoor learning is the sheer lack of space; we have one concrete playground with three scrubby bushes and reside in a heavily built up area, full of Victorian terraces, multiple train lines and a main road. Moreover, for my school and for many more, other barriers such as weather, time, safety, accountability (Gruenewald, 2006), adult supervision and vandalism (Edgington, 2002) can also impact on outdoor provision. Significantly too, it seems that outdoor 'play' is not given the weight it deserves once a child has left the Foundation stage. Waite explains that the Early Years Foundation Stage framework endorses outdoor learning due to its positive impact on children's well-being and development, but that the use of the outdoors is exponentially decreased upon transition to Key Stage One and beyond, suggesting that curriculum demand has a significant role in this (2011, p50).

However, there is suggestion the UK is moving towards change; outdoor learning in education has recently become a topic under much scrutiny, with the popularisation of 'Forest School' and the Government's support of research in this area. The 'Natural Connections Demonstration Project' (Waite et al, 2016) emphasised the positive impact of learning in the natural environment, particularly highlighting the level of enjoyment observed across the participants. The researchers' findings emboldened them to link enjoyment with attainment, although the evidence arguably remains difficult to measure objectively; schools working within the study were reluctant to place definite weight on the impact on attainment. Despite this, the report draws attention to enough difference in data between the schools to suggest that the project had had an impact on this. I feel that, in a climate where attainment is a driving aim and with Schools Minister Nick Gibb keen on rote learning and testing (DfE, 2016), surely this vague connection to attainment is a negative. There is certainly a connection between enjoyment, engagement or 'involvement' and the hoped-for outcome of better pupil results, as stated within the Leuven Scale, but it seems that, as yet, no research has been able to prove this conclusively in an outdoor setting. In fact, Laevers' (2012) explanation of 'involvement' within the frame of the Leuven Scale casts further doubt for me as to whether outdoor learning can effectively improve pupil progress. Laevers' explains that 'involvement' is when a child is "engrossed by an activity" (2012). This suggests a need for one single focus point – but anecdotally, in a new or changed environment it can be incredibly difficult to maintain this. By the very nature of the outdoors, one's concentration is continually interrupted. Moreover, pupil enjoyment must be nurtured - Laevers argues that a child needs to have confidence in their environment for them to be able to engage in learning (2012), as, in unfamiliar surroundings, some children may feel vulnerable and thus unlikely to engage happily in any activity.

Lovell's briefing notes on the links between natural environments and learning repeatedly allude to the need for more research in this area. She suggests that there is evidence that greater use of outdoor environments can improve emotional, behavioural and learning processes and outcomes, but that the data are skewed with regards to *which* environments, as there is more likelihood that any research done will be connected to forests or more "wild spaces" (2016, p2) and there is a lack of consistent, measurable factors. Furthermore, Warren et al (2014) discuss social equality and justice within 'outdoor experiential environments' as an "exercise in hope and despair" (p98), whereby huge inequalities in diversity and inclusion are still rife. Lovell suggests this further impacts current data, as only a section of society has been included and no uniform, correlative structures for research have yet been laid out (p3). In fact, findings in a study of the impact of outdoor education on children's mental health, outdoor learning had only a small positive impact on male participants, and no perceivable impact on girls (Gustaffson et al., 2012, cited by Lovell, 2016). Also within her brief, Lovell cites evidence suggesting outdoor learning may be beneficial to children with autism or with other special needs. This resonates with my 'beach train' diary notes on one of the children, who was a very

nervous traveller and had almost not joined the trip, such is his discomfort with change. He was notably calmer when given a task to focus on. In fact, he became deeply engaged with the activity, in which he was able to think from another's perspective.

In counterbalance, in the Cambridge Primary Review (2010), Alexander cites Holt (1983), arguing that children should be allowed opportunities to pursue topics that interest them, so that a natural love of learning can be fostered (2010, p424). This does suggest a potential for deeper, conceptual learning, the clear engagement and enjoyment repeatedly mentioned in the 'Natural Connections Demonstration Project' (Waite et al, 2016), could be due to the opportunity to take control of one's own learning. It could be argued that this provides a chance for children to take ownership and responsibility (Bilton, 2010), exercising a greater level of choice in learning for themselves. Within Bilton's research (2010) there is a suggestion that children's increased competence promotes self-confidence, potentially enhancing self-esteem. Through this, children could develop a strong 'can do' approach, thus developing a growth mindset (Dweck, 2012) Moreover, whilst children are not necessarily free from adult control or supervision, with greater space there is the potential for children to feel happier and less stressed (Bilton, 2010) and to develop resilience and independent learning - fundamental, life-long skills (Claxton, 2002).

Alexander also references a report in which primary school children benefitted hugely from experiential learning activities that significantly widened their life experience, enabling them to then be able to discuss their understanding and thereby develop their writing skills from a much more solid position of conceptual understanding (Dyson & Gallannaugh, 2007, cited by Alexander, 2010). This resonates with my understanding of my own class, financial and social constraints mean that, despite our geographical proximity to the coast, some of my pupils have never been to the seaside. By this suggestion, it would seem absurd to ask those pupils to write about a trip to the beach before they have any reference or life experience of such a journey. However, how much stock should be placed in this surely comes down to a teacher's perception of the students and their abilities. It is safe to assume that none of my students have been on a trip to the moon, but I do not feel that that should stop us exploring the idea as a class. Imagination and experience can be argued to have a symbiotic relationship wherein one may feed or embellish the other (Fettes, 2013). Similarly, Waite's research uses participant's memories of experiential learning to reflect on how this may maintain and enhance engagement and memory (2007). In this, she suggests that a combination of imagination and memory is just as meaningful as an 'accurate' recollection of events. Many of the participants were able to recall significant childhood memories of outdoor experiences, often in considerably positive detail (Chawla, 1990, cited by Waite, 2007). Others doubt the validity of these accounts however (Borrie & Roggenbuck, 1995; cited by Waite, 2007), as more inconsequential details were often as vivid as any key or central theme (Bixler et al 2002; cited by Waite, 2007). For my intentions as a student teacher aiming to improve my practice for the benefit of my students, I question whether this is a negative - I agree with Fettes' suggestion that imagination and experience can mutually support and co-construct and subsequently both are incredibly important tools within my own classroom. I am certainly not attempting to train my students as exclusively objective 'reporters', where there is no space for artistic licence. Waite draws upon the DfES report (2006), stating that memorable learning experiences shape our world, our behaviour and lifestyle choices later in life (p3). Therefore, it appears that we know outdoor or experiential learning 'must' be good, but as yet lack the developed research and a sufficiently robust tool with which to quantify it.

### **Methodology**

McNiff calls action research "a rigorous research methodology" that can enhance teachers' pedagogical process and ultimately benefit their students (2001). Much like the dissertations she references, I wish to attempt to answer the question: 'how do I improve my work?' (2001, p9), by critically observing my learners' experiences when learning outside the classroom. The evidence I

gather should then inform my practice by allowing me to understand the impact on their development and conceptual understanding, culminating in a better understanding of 'experience' as a key concept of learning. Thus I hope to be able to "improve" my practice and the children's environment, to enable them to reach their fullest potential (McNiff, 2001).

My main data come from unstructured, casual group audio-recorded accounts on a trip to the local allotment where, in an attempt to avoid colouring the opinions of the children, I simply recorded the discussions held in my presence. There was very little teacher input and I hoped to maintain a 'naturalistic' stance (Thomas, 2013, p109), however I recognise that my presence may have affected the children's attitudes and offerings and thus my data (Kumar, 2014). Thomas also considers there to be potential for group dynamics to have an impact, "risky shift phenomenon" can allow for a group to make 'riskier' decisions than those of individuals (Thomas, 2013 p203). Whilst I acknowledge that my options for data collection were limited to group interview due to the fullness of the term and the afore-mentioned lack of appropriate environment opportunities, I believe this may have had a positive impact on my data – if we assume the likelihood of riskier decisions being made by people when working in groups, as there is 'safety in numbers', there is also therefore a likelihood of riskier decisions when learning outdoors. It is this 'risky' behaviour that may prove to be one of the benefits of outdoor learning (Waite, 2007).

I am also aware that I, as practitioner, will have impacted the data of myself as researcher, particularly with regard to the data from the trip to the beach. Within the confines of a train carriage, the choice for the children may have been less "what do I want to focus on next?" but rather "do I want to focus on the learning made available to me by my teacher?" I recognise this as an important example of my 'positionality' within my research- my social position, as well as my gender, age, ethnicity, social background, likes and dislikes are undoubtedly likely to affect my interpretation of the data. Furthermore I recognise that this is not a strictly 'outdoor' environment. However, it provides me with the opportunity to question how effectively the children engaged with learning in an *unusual* environment, as opposed to what guided their focus. Moreover, I consider being an active participant within my own research to be a positive; it is these dynamics, or relationships that I seek to understand, strengthen and improve (Thomas, 2013: p144). Ultimately, I believe we must accept and view this research within the construct of an 'interpretivist paradigm' (Thomas, 2013) wherein data can be interpreted and construed according to our own perception, our beliefs and values, experiences and background 'construct' us. Therefore each of the participants within this study, including myself as researcher, come into it holding different attitudes and understanding.

Acknowledging the above data as my interpretation of the children's experiences, I kept a 'personal reflections' diary to establish an alternative account of my own experience. These are data that are open to many interpretations and is fundamentally qualitative, wherein the "description and narration of feelings, perceptions and experiences", rather than tangible, *measurable*, quantitative evidence is the focus (Kumar, 2014: p14). This is ideal for my research as I am interested in the inter-relation of ideas between my students and myself. This style of writing is categorised as an 'event-contingent' diary, as I recorded an entry only when outdoor learning occurred (Thomas, 2013: p200). I believe this also correlates with my Literature Review in that, as yet, it seems that no definitive, quantitative measure has been established for outdoor learning (Lovell, 2016).

For the purpose of triangulation, I chose to use 'The Blob Tree' poster. My aim here was to highlight individualised 'start' and 'end' positions for the children, by asking them to circle the 'blob man' that represented their opinion of learning in a classroom and one for their opinion of learning outside. This allowed the participants to establish their own stance, against the backdrop of the group accounts (Thomas, 2013: p203). These data are very much open to the interpretivist paradigm, whereby a myriad of factors could affect the choice of 'blob man' for each child, from the time of the day, to their

engagement with the request. However, I feel they are valuable qualitative data and also serves to give some autonomy to the students, thus showing respect to them and building upon the alternative angles from which to interpret the data.

### **Ethical considerations**

Thomas emphasises that ethical consideration is an important principle of researcher respect for their participants (2013: p38) and that it is an integral part of any research project. I absolutely agree and thus undertook to work within the University's ethics policy to gain clearance with both my Head teacher and Deputy Head, to notify the children of my intentions and thus establish myself as 'researcher' and to provide them with the opportunity to decline to take part at every stage of my process. Moreover, to protect their identity and right to privacy, I have used pseudonyms, deleted all original recordings and emphasised to all participants that my research will have no impact on the children's academic progress, or result in extra work for them. Furthermore, rather than place significant strain on individuals, I have used the class as a whole.

### **Data presentation and analysis**

My aim was to find evidence that could confirm the benefits of outdoor and experiential learning and subsequently help me to develop practical applications that may positively affect children's development and conceptual understanding. I sought to use my collated data to create an illuminative analysis and therefore adopted "the assumptions of interpretivism" wherein it must be accepted that specific accounts inform each other and that interpretations are constructed by each of us in a different way (Thomas, 2013: p235). I approached my data using a method of constant comparison, whereby I continuously and repeatedly read through each piece, comparing wording and relevant elements until particular themes began to emerge (Thomas, 2013: p236).

From the 'allotment transcripts', a major theme arose around engagement, which I was able to break down into two strands, one of 'outdoor environment as a catalyst for engagement' and one of 'self-directed engagement'. Whilst the dialogue initially appeared multi-focussed and reactionary, in fact a pattern emerged to suggest that the children would zone in on a particular focus point and that this would then develop into investigation and deeper questioning. With the first strand, there were instances where the environment would impact on the child, such as the 'sticky weeds' dialogue (line 77 – 86); I would suggest that the learners did not choose the area on which to focus, but chose to engage with what was presented. In this particular section of dialogue, they were sufficiently interested to investigate further, with all five children participating moving from what could be considered reactionary or passive roles, into active investigators. Moreover, they questioned the situated learning and appeared to dig deeper into their understanding. It could be argued that they all contributed a greater level of learning and mutually enriched each other's conceptual understanding (Claxton, 2002).

The second theme of 'self-directed learning' appeared to work in a similar way, but significantly the *learner* chose the focus rather than the environment dictating it. In this, it appeared that the children took charge of their own learning, adding to and layering their understanding as they delved deeper. For me, a clear example of this is the 'sticky flowers' dialogue (line 61 – 76); a deliberate choice of focus from one child not only sufficiently engaged him, but subsequently engaged six more children. This began as an investigation from the instigator, using touch, sight and physical exploration and then developed into a group process wherein the children physically tested objects, suggested theories and developed their understanding by extending their circle of attention to scrutinise more possibilities of what the 'sticky thing' could be. They continuously questioned and investigated as they carried out this experiment and it could be argued that, as with the first strand, they mutually enriched and supported each other's access to deeper understanding. Certainly, the final section of this dialogue (line 73 – 76) could be interpreted as the children providing 'scaffolding' for significantly extended

learning by acting as 'more knowledgeable other', thus exponentially increasing the group's conceptual understanding (Vygotsky, 1962, cited in Bates, 2016: p46). Furthermore, I would argue that this may have a potentially significant impact on their self-confidence, inter-relation and communication skills (Claxton, 2002; Waite, 2011).

Within Lovell's evidence brief (2016) there are implications that outdoor learning only positively affected boys and that that affect was weak at best. Within my own data, an equal amount of girls presented within my 'self-directed learning' data and slightly more boys were present in 'environment as catalyst'. This was illuminating for me as, generally speaking, my female students tend to be more readily engaged in class. Whilst my data are by no means extensive, for my own class and my own pedagogy it may be acceptable to assume that both genders benefitted from the greater levels of stimulus and the opportunity for 'hands on learning' and that experiential learning may provide greater access for some of my students. Also within her brief, Lovell cites evidence suggesting outdoor learning may be beneficial to children with autism or with other special needs. This resonates with my 'beach train' diary notes on 'JC' as he was notably calmer when given a task to focus on.

Also useful for my pedagogical development was the way in which the children seemed to link their outdoor learning with their classroom learning, ultimately lifting it off the whiteboard and into 'the real world'. This was evident across all data, suggesting it is something the children are naturally inclined to do and is significant because it may mean they are able to activate memory to supplement their present understanding, implying they are able to contextualise theory and apply it practically (Waite, 2007; Fettes, 2013).

When applying the Leuven Scale to my data from the allotment, it aligned with my concerns that learning outdoors interrupts focus. The Scale suggests that to have extremely high levels of engagement a child must be "concentrated without interruption". Whilst there is evidence of high concentration in the data relating to the allotment, I do not believe that it was continuously sustained as the children tended to move on to a new point of focus regularly. This may be the greatest flaw of outdoor learning. Conversely, this may not be a negative. 'Real life' is fast-paced, multi-focussed and demanding. The same can be said of our experience of outdoor learning, therefore there is argument for exposing children to learning in this style. By doing so, perhaps these learners will develop a greater level of focus and commitment and find ways to reach decisions more quickly. As Claxton states, resilience is being able to "stay engaged despite external distractions" (Claxton, 2002: p19). He adds that: "if you help students become better learners, their achievement rises" (Claxton, 2002: p15).

With this in mind, I chose to use the 'beach trip' reflection diary as a deliberate contrast from both the traditional classroom and the perceived ideals of an outdoor learning environment. I hoped to provide an alternative space in which some classroom behaviours could be established, such as reinstating myself as teacher, to explore the children's engagement when learning is more experiential but the opportunity to choose their own focus is taken away. A train carriage provides a quieter space in which to engage with learners and I would suggest this played a significant part in their engagement. The data may add weight to the idea that experiential learning is beneficial, but that the environment is a secondary element. Perhaps the opportunity to 'do' is more important than the opportunity to extensively 'explore'. According to the Leuven Scale, engagement was high and far more sustained (see than at the allotment; this could be due to the decreased amount of distraction or the re-establishment of teacher-pupil relationships. There is also the potential argument that we instinctively register the train as 'safer' – open space would historically have made humans vulnerable and our senses are often on high alert when outside for this very reason (Goleman, 1995). Once physical parameters had been registered, the children's focus could be perceived as being available to engage more deeply in their learning.

Fifteen students independently completed the 'Blob Tree' sheets, which I used to establish the children's dispositions on learning in a classroom and learning outside. Of particular note was the correlation in their 'blob' choices. Five children selected the 'falling blob' for their feelings about classroom learning which, due to the helplessness associated with falling, could be interpreted as an issue with the lack of control afforded to them in the classroom and a need in these learners to have more power in choosing their learning topics. Juxtaposed are the seven sheets with 'rope-swinging' blobs for 'outdoor learning'; this could be perceived to mirror the feelings associated with falling, but offers an opposing experience due to the greater choice, power and control implications. Significantly, no discernibly negative 'blobs' were selected for outdoor learning, further supporting the implication that enjoyment fosters engagement (Waite et al, 2016).

### Conclusion

Gibb states that "thinking skills such as problem solving, creativity and inventiveness" rely on "considerable background knowledge" (DfE, 2016). This correlates with the evidence in the transcript of the children referring back to their classroom learning whilst outdoors and I perceive in this a potential personal pedagogic ideal that outdoor learning be supported and supplemented with focused classroom learning, providing learners with multiple sources and styles of information and opportunities to use recall to deepen their conceptual understanding. Brookes argues that outdoor learning "cannot change personal traits" (2003: p19) and whilst I would not dispute that, my data suggest that experiential learning can at least allow a learner to explore and flex their learning capabilities. Dweck believes students with a growth mindset tend to be able to 'mobilise' their mental resources and to "dig in and do what it takes" (2012: p57). For students to develop these skills, they may benefit from exposure to environments that can foster and enrich these 'resources'.

Moreover, I feel that a clear connection between pupil and teacher enjoyment and their subsequent engagement was present in my data, which translated as high levels of energy and often culminated in significant leaps forward in understanding and learning. The children clearly revelled in the space and the opportunities, as demonstrated by the 'Blob Tree' evidence and were naturally inclined to support and enrich one another's learning. I feel that I have developed a greater understanding of experience as a key concept of learning and that I have sufficient evidence to support the provision of as many outdoor and experiential learning opportunities for my students as I can. Whilst I recognise that the confines of the curriculum and the restriction on space within school make this a difficult undertaking, I see no reason to dispute the implications of enjoyment feeding engagement and to grab every opportunity with both hands.

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