

## The foundation phase in Wales, outdoor learning and motor development

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### Abstract

**Introduction:** Wales is a small country in the United Kingdom which has devolved government powers for Education. Since 2008 the curriculum in Wales has moved away from the traditional subject based approach in England with the development of The Foundation Phase. The Foundation Phase in Wales is a play-based curriculum for three- to seven-year-olds that emphasises the use of the outdoors. Research highlights the many benefits that are associated with learning in the outdoors for children’s development in relation to physical activity, motor development, and wider holistic development. Physical activity in early childhood is associated with motor development which in turn is associated with later physical activity in both later childhood and adolescents. Therefore, physical and outdoor experiences in early childhood education are important in relation to both children’s development and health. **Material and Methods:** Existing research in the field of outdoor education, motor development and playful pedagogy are examined in relation to the play based Welsh Curriculum. Original research into the implementation of the Foundation Phase in Wales which examined the contribution of the Foundation Phase to children’s physical development and wider learning is also examined. **Results:** The studies identified found that whilst supporting children’s engagement, well-being and locomotor skills, the Foundation Phase pupils were not developing proficiency in object control skills. **Discussion:** This paper discusses the implications of this in relation to pupils’ development and health. It outlines a programme of professional development that has been implemented in some regions in Wales to address this issue. However, motor development of children in Wales remains a cause for concern where staff have not yet received professional development to address this.

**Key words:** Motor Development, Play, Outdoor learning, Early childhood

### Introduction

Wales is a small country in the United Kingdom with a population of just over three million people and its own language. In 1999 devolution in the United Kingdom resulted in the establishment of separate governments in Scotland, Northern Ireland and Wales. The resulting devolved powers has seen increasing divergence between the four nations of the UK particularly in Education.

Since 2003 the importance of the outdoor environment in Wales has been recognised in policy with the then Minister for Culture, Welsh Language and Sport highlighting the mountains and wild landscapes of Wales as a wonderful resource for active recreation to “exercise the body and mind” (Welsh Assembly Government, 2003, p.1). In order to engage the people of Wales with the outdoor environment, changes in the curriculum incorporated the outdoors as a part of children’s learning from age three through to fourteen. In early childhood the Foundation Phase emphasises the outdoors as an integral part of children’s learning and from seven to fourteen years children progress to a more formal curriculum with the outdoors evident as Adventurous Activities in the Physical Education curriculum (DCELLS, 2008a, 2008b).

The Foundation Phase in Wales is a holistic play-based learning continuum for children aged three to seven. A range of international approaches to early years education influenced the development of the Foundation Phase, with ministers in Wales drawing on best practice from *Reggio Emilia* in Northern Italy, *Te Whāriki* in New Zealand, *High Scope* in the USA and *Forest Schools* in Scandinavia (Wyn Siencyn, 2015). Well-being underpins the Foundation Phase, and the learning emphasises ‘firsthand experiential activities’ and ‘play providing the vehicle’ (DCELLS, 2008a:4). The development of an appropriate learning environment is an integral part of the Foundation Phase provision, with advocacy for the use of indoor and outdoor spaces which are exciting, fun, stimulating and safe, promoting discovery and independence (DCELLS, 2008a).

There has been a growing interest in the outdoor environment as an integral and valued resource for children’s learning and development (Garrick, 2004; Louv, 2005; Maynard & Waters, 2007; Waite, 2010). Research has focused in particular on the natural environment, where the landscape provides dynamic and rough playscapes that challenge motor activity and obstacles that encourage a variety of bodily skills and contact with nature has been increasingly linked to mental health (Pretty et al., 2005; Louv, 2005). Louv (2005) highlights

increasing psychological and emotional problems in young children who have reduced contact with natural environments. He goes so far as to identify ‘Nature-deficit Disorder’ as the human costs of alienation from nature, among them: diminished use of the senses, attention difficulties, and higher rates of physical and emotional illnesses’ (Louv, 2005, p.36). Bird (2007) also makes a strong case for the importance of engagement with nature suggesting nature impacts positively on children’s concentration, reducing levels of stress and aggression.

The Foundation Phase incorporates outdoor learning in each of the seven areas of learning and the rationale for this use of the outdoors as a site for learning comes primarily from the influence of Scandinavia and the Forest Schools movement, but also from the influence of educational theorist such as Froebel. The claims made for the benefits of using the outdoor environment are well known (Maynard et al., 2011), with studies identifying the impact of the natural environment on motor development (Fjørtoft, 2001, 2004), quantity and quality of physical activity (Dyment& Bell, 2007;Mygind, 2007;Luchs&Fikus, 2013), physical and mental health (Pretty et al.,2005; Louv, 2005), and concentration (Bjørklid, 2005;Grahnet al., 1997). Fiskum&Jacobsen (2013) suggest there is reduced stress for pupils in outdoor environments due to less need to suppress the tendency for action.

Previous research in Foundation Phase settings found that increased emphasis on the use of the outdoors altered perceptions of underachievement both by pupils and teachers (Maynard et al., 2013). Maynard et al. (2013, p.212) concluded that the increased opportunities for child-initiated learning and teachers’ different expectations of behaviour in outdoor spaces may have given pupils ‘the opportunity to reconstruct themselves as strong, competent children rather than as ‘underachieving’.’ This is recognised in the Forest School approach where the concept is underpinned by a philosophy of holistic child-led learning (Elliot, 2014).

The use of the outdoors means that children are more likely to perceive what they are learning as play. Links between play and high levels of involvement and intrinsic motivation have been well documented (Brock et al., 2009; Howard et al., 2002; Howard & McInnes, 2010; Moyles, 2010). Howard& McInnes (2010) proposeutilising a concept of play which is based on children’s perceptions highlighting how children make the distinction between work and play with clear cues outlined in Table 1.

**Table 1: Cues that children use to distinguish between play and work**

Play		Work	
Emotional cues	Environmental cues	Emotional cues	Environmental cues
Voluntary	On the floor	Compulsory	At a table
Under child’s control	Lacks adult involvement	Under adult control	Includes adult involvement
	No adult evaluation		Includes adult evaluation
Easy	Can be continued-focus on the process	Hard	Has to finish-focus on the product
Fun	Physical	Can be fun	Not physical

The distinction children make between play and work is of importance as ‘children who practice a task under playful practice conditions (on the floor, physical, adult nearby, choice) show superior performance and behaviours conducive to learning compared with children in a formal practice condition (at a table, not physical, adult present, no choice)’ (McInnes et al., 2009, p.124). This notion of playful practice allows children to learn in a way that they perceive as play, thus maintaining motivation and engagement in the task. It is clear in the table that physical and not physical are cues, which children relate to play. This is evident in the Foundation Phase where use of the outdoors and more physicality see children perceiving learningresulting in more engagement in learning (Wainwright et al., 2020).

Palmer (2006, p.59) however, expresses concernabout the lack of outdoor play opportunities for young children with ‘the decline of the free-range child’ and Wilson (2012, p.32) highlights the contrast between structured play and ‘free-range’ playing in a wild overgrown space. She touches on many of the complexities of outdoor play in“wild corners where we could hide and make dens and discoveries. In this forbidden space we escaped, when no teacher was looking, and ‘learned the things that cannot be taught’.”Wilson emphasisesshow play in wilder spaces doesn’t mimic the playground, with its exclusionary rules “but in those marginal places, everything was different. The rules melted somehow. There was a sense of being drawn in and exploring, being captivated and liberated all at the same time” (2012, p.32).

Wilson (2012) captures the fears of Louv (2005), who has identified the psychological and emotional problems of children not playing in the natural environment. Similarly, Gill (2007) argues that our risk-averse society does not enable children to take risks, learn to make judgements about safety and develop resilience. Wilson (2012) also highlights the complex social nature of play and the darker side of play, which Greishaber and McArdle (2010) and Sutton-Smith (2008) claim is so often ignored, not to mention the challenges of physical play for anyone with a developmental coordination disorder (Kirby and Drew, 2004; Macintyre and McVitty, 2004). The wild space Wilson describes is full of variables, an important factor for creativity in what Nicholson (1971, p.6) calls ‘the theory of loose parts’ which says, ‘in any environment, both the degree of

inventiveness and creativity, and the possibility of discovery, are directly proportional to the number and kind of variables in it.' Hyndman and Mahony (2018) also highlight how loose parts and a variety of affordances in the outdoors develops and supports creativity through complex interactive activities.

The concept of affordances has been widely used in the field of outdoor research (Fiskum and Jacobsen, 2013; Fjørtoft, 2001, 2004; Hyndman and Mahony, 2018; Kyttá, 2002). Gibson (1986:127) states that 'the affordances of the environment are what it offers the animal'. Affordances have properties that they offer to a species, but the affordance not only depends on the environment but also the species and as such are variable and relational emerging from the interaction between objects, organisms and the environment. The ontology of affordances opposes the dualist treatment of the individual and the environment, with Kyttá (2002, p.46) suggesting that 'monism, the idea that humans (and all other organisms) form an inseparable unit with the environment, crystallises in the concept of affordances through its combination of reality with the knowledge of reality.' This ontological perspective fits well with the implied monism of the Foundation Phase, where the learning is allowed to take place when and where it is most appropriate to the needs of the learner, as opposed to the traditional classroom, table and chair set-up that empowers the teacher. The free-flowing movement between indoors and outdoors that is advocated in the Foundation Phase is a move away from the reductionist view of people and environment being separate.

Kyttá's (2004) study of affordances of children's environments found that a rural natural environment provided a superior number of affordances, something that Fjørtoft and Sageie (2000) and Fjørtoft (2001, 2004) have noted. Kyttá (2004) suggests children's ability to perceive affordances develops as they grow and learn new physical skills, so when a child learns to walk, a new field of affordances opens up and they are able to perceive new features of the environment and intuitively use them for physically active play. Fjørtoft (2004) maintains that the diversity of affordances in the natural environment encourages a wide range of physical actions and in so doing develops motor competency. She highlights the importance of the environmental complexity and diversity in nature as an important influence on physically active play (Fjørtoft 2001, 2004). The use of the outdoor environment as part of the Foundation Phase should be an important factor in the development of motor competence.

Concerns have been raised about the levels of sedentary behaviour in young children (Gray et al., 2015), with Brown et al. (2009) suggesting pre-schoolers are sedentary throughout their pre-school day. Dowda et al. (2009) suggest the children's environment has an impact on activity levels, with schools with more space, less fixed equipment and more portable equipment having children with significantly higher levels of physical activity. Mygind (2007) found that a Forest School environment had a significant impact on the levels of physical activity of children, suggesting that outdoor and indoor learning should be combined to impact on physical health. Fjørtoft and Sageie (2000) and Fjørtoft (2001, 2004) also highlight the impact of the natural environment on motor fitness and coordination with Fjørtoft suggesting that diversity of the affordances in the natural environment encourage a range of play and more challenging physical experiences that impact on children's balance and coordination. Maude (2010) advocates for the benefits of outdoor play for young children as play is the primary mode through which children learn about their bodies and movement capabilities, developing gross and fine motor skills (Goodway et al., 2020).

Although motor skills develop through play, it is a misconception that through playing alone, physical development will simply occur naturally (Brock et al., 2009). For some phylogenetic motor skills, such as locomotor skills, lots of opportunities to move in a variety of environments may be sufficient (Goodway et al., 2020). However, play alone is not sufficient to realise children's full potential movement vocabulary (Maude, 2010), in particular in relation to the ontogenetic object control skills (Goodway et al., 2020). Progression to the mature stage of fundamental movement patterns depends on a variety of factors, the environment, the child's maturation, and the conditions within the task (Hayward & Getchell, 2009) and it is widely accepted that some motor skills do not develop without appropriate instruction, modelling and opportunities for practice (Barnett et al., 2013; Barnett et al., 2016; Goodway et al. 2020; Logan et al., 2012). Although the Foundation Phase is a play-based curriculum with an element of child-initiated learning, the retention of adult-led learning enables children to be guided through tasks in a more focused way when appropriate (DCELLS, 2008a). This suggests that there should be opportunities for the children to have the instruction and opportunities to practice required for developing their motor skills.

Research in relation to children's physical literacy in the Foundation Phase found the outdoor, play-based curriculum had children with high levels of engagement and wellbeing (Wainwright et al., 2016; 2018). This would be expected in light of existing literature highlighted previously in this paper. Pupils were also developing locomotor skills which would also be expected with the many opportunities for physical activity in a variety of environments. However, despite retaining taught sessions for physical development, which should enable appropriate instruction for the development for ontogenetic skills, the Foundation Phase pupils were not developing proficiency in object control skills (Wainwright et al., 2018). The study found that Foundation Phase teachers lacked specialist knowledge of motor development required to support the development of these ontogenetic skills (Wainwright et al., 2018; Goodway et al., 2020).

Motor development models highlight the importance of early childhood with Seedfelt (1980) and Brian et al., (2020) suggesting the existence of a proficiency barrier. Clark and Metcalf (2002) identify the importance of

a base camp of skills in their mountain of motor development and Stodden et al., (2008) and Hulteen et al. (2018) proposing developmental models highlighting the complexity of relationships between physical and psychological attributes, physical activity and health outcomes. A growing body of research supports the relationships in these models, with Barnett et al., (2009) identifying object control proficiency in childhood as a predictor of physical activity in adolescents. Robinson et al., (2015) examined six years of research studies and report:

„A positive relationship exists between motor competence and physical activity across childhood. The strength of associations between motor competence and both cardiorespiratory endurance and muscular strength/endurance tends to increase from childhood into adolescence. Motor competence is both a precursor and a consequence of weight status and demonstrates an inverse relationship across childhood and adolescence“

(Robinson et al., 2015.p1273).

## Conclusion

In light of this research and literature in the field of motor development, the lack of proficiency in object skills of the children in Wales (Wainwright et al. 2018) is clearly a cause for concern. When considering the notion of a proficiency barrier in relation to access to a range of physical activities, and also the role that motor competence has in driving a positive physical activity and health trajectory into adolescents and beyond (Barnett et al., 2009; Stodden et al., 2008; Robinson 2015) there may be serious health consequences for the children of Wales failing to develop object control skills in early childhood.

To address the lack of teacher expertise in relation to motor development, a programme of professional development was created, SKIP-Cymru\* (Wainwright et al., 2019) which has been recognised in policy, both in the Health Social Care and Sport Committee report on Physical Activity of Children and Young People (National Assembly for Wales, 2019) and as a case study in the Journey to a Healthier Wales support materials for the Well Being of Future Generations Act (Future Generations Commissioner for Wales, 2019). The SKIP-Cymru programme draws on the evidence based Successful Kinesthetic Instruction for Pre-schoolers (SKIP) programme in the USA (Brian et al., 2014; Goodway & Branta, 2003; Robinson & Goodway; 2009) and the work of Howard and McInnes on the analysis of play cues (Howard et al., 2002; Howard & McInnes, 2010; McInnes et al., 2011). This combination ensures that SKIP-Cymru aligns with the playful pedagogy of the Foundation Phase (Wainwright et al., 2019).

SKIP-Cymru training combines theories of motor development, focusing on stages of development and Newell's (1986) theory of constraints. This enables teachers to analyse children's abilities and through practical workshops learn to manipulate environmental and task constraints to support motor development (Goodway et al., 2020). Teachers are then able to set up appropriate activities in the children's physical development sessions that support all aspects of motor development. The training also explores how motor development can be incorporated across areas of learning. For example, a Foundation Phase mathematical development task outside could be throwing a bean bag onto number targets to make addition sums. Staff trained with SKIP-Cymru are able to help children with their throwing as well as their maths.

Initial evaluations of the impact of the programme suggest that teachers who have been trained with SKIP-Cymru are able to improve the children's object control skills as was the intention of the programme (Wainwright et al., 2019). However, more research is needed to establish the fidelity of implementation and the wider relationships between the motor skills of the children in Wales and their physical activity behaviours. Children's motor development in Wales continues to be a concern with the most recent research still highlighting children with poor motor skills in schools where staff have not yet received the SKIP-Cymru training (John et al., 2019). Whilst there are many positive experiences for pupils in Wales due to the emphasis on outdoor learning in the Foundation Phase, there remain serious concerns about the lack of proficiency in ontogenetic motor skills in early childhood. Therefore, there is need for more professional development for teachers and practitioners working in all early childhood settings if this issue is to be addressed and children in Wales are to have the foundational skills to access to a range of physical activities throughout life.

\*Cymru is the Welsh name for Wales

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