



Title: The Interpretation and Delivery of the Welsh
Foundation Phase and its Contribution to
Physical Literacy

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THE INTERPRETATION AND DELIVERY OF THE WELSH
FOUNDATION PHASE AND ITS CONTRIBUTION TO
PHYSICAL LITERACY

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Ph.D

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THE INTERPRETATION AND DELIVERY OF THE WELSH FOUNDATION PHASE
AND ITS CONTRIBUTION TO PHYSICAL LITERACY

by

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A thesis submitted to the University of Bedfordshire in partial fulfilment of the
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THE INTERPRETATION AND DELIVERY OF THE WELSH FOUNDATION PHASE AND ITS
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E. N. WAINWRIGHT

ABSTRACT

The introduction of the Foundation Phase gave a unique opportunity to study the interpretation and delivery of a play-based early childhood curriculum. This new curriculum saw the disappearance of Physical Education for pupils under the age of seven in Wales. Physical Education is acknowledged as more than the development of physical competence, being part of a process concerned with lifelong physical, intellectual, social and emotional learning accrued through a range of physical activities, in a variety of contexts (Doherty and Brennan, 2008). As such a goal of Physical Education is physical literacy, (Hardman, 2011; Talbot, 2007). In light of this, this research set out to explore the contribution of the Foundation Phase to the development of children's physical literacy. In order to achieve this, a three-phase complementarity mixed-methods design (Greene *et al.*, 1989) was used to generate data over two years in selected schools in Wales. The schools were found to be enacting the Foundation Phase with fidelity to the original aims of the policy makers by demonstrating the key features of play-based active learning, focused adult-led sessions, child-initiated learning, and use of the outdoors for learning. In so doing they were deemed to be successful in achieving the aim of the Foundation Phase of developing independent, motivated active learners. The Foundation Phase was also found to be supporting the development of children's cognitive development with good levels of achievement in literacy and numeracy assessments. The playful pedagogy observed in the schools enabled the pupils to have autonomy in their learning. Pupils were motivated, active and engaged in embodied learning both indoors and outdoors. The findings indicated that the Foundation Phase was making a positive contribution to the development of children's physical literacy.

DECLARATION

I declare that this thesis is my own unaided work. It is being submitted for the degree of Doctor of Philosophy at the University of Bedfordshire.

It has not been submitted before for any degree or examination in any other University.

Name of candidate: Elizabeth Nalda Wainwright

Signature:

Date: 17/12/14

I wish to dedicate this work to my wonderful daughters, Ellie and Jess, who are the inspiration for everything I do, and to my parents who have always supported me in everything I have achieved.

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Abbreviations and Terminology

| | |
|----------|---|
| QCA: | Qualifications and Curriculum Authority |
| DfEE: | Department for Education and Employment |
| DCELLS: | Department for Children, Education, Lifelong Learning and Skills |
| IPLA: | International Physical Literacy Association |
| WAG: | Welsh Assembly Government |
| LEA: | Local Education Authority |
| KS1: | Key stage one |
| KS2: | Key stage two |
| PLC: | Professional Learning Community |
| WHO: | World Health Organisation |
| MVPA: | Moderate to Vigorous Physical Activity |
| ACCAC: | Awdurdod Cymwysterau, Cwricwlwm ac Asesu Cymru (Qualifications, Curriculum and Assessment Authority for Wales) |
| ESTYN: | The education and training inspectorate for Wales |
| DST: | Dynamic Systems Theory |
| SDT: | Self Determination Theory |
| ADHD: | Attention Deficit Hyperactivity Disorder |
| BOT-2: | Bruininks-Osteretsky Test of Motor Proficiency, Second Edition |
| TGMD-2: | The Test of Gross Motor Development, second edition |
| FMS: | Fundamental Motor Skill |
| GMQ: | Gross Motor Quotient |
| PSPCSA: | The Pictorial Scale of Perceived Competence and Social Acceptance |
| LWBS-YC: | The Leuven Well-Being Scale for Young Children |
| SPC: | Social Play Continuum |
| ALT: | Academic Learning Time |
| ALT-PE: | Academic Learning Time in Physical Education |

ALTOS: Academic Learning Time Observation System
PASS: Pupils Attitudes to Self and School Rating Scale

Key of abbreviations for data

M1: Interview with Minister for Education
LA : Interview with Local Authority Foundation Phase Advisor
H1: Interview with head teacher
DH 1: Interview with deputy head teacher
T 1: Interview with Foundation Phase Teacher number
1(Interviews numbered 1 – 10 for the ten teachers)
PI: Pilot interview
TA: Interview with teacher in School A at time T2
TB: Interview with teacher in School B at time T2
FNA: Field Notes School A (followed by page number and line
number)
FNB: Field notes School B (followed by page number and line
number)
PFNA: Pilot field notes School A
PFNB: Pilot field notes School B
V: Video (followed by the number of the video)
CTV: Child led tour video
IR: Inter-rater field notes
LSA: learning support assistant

Clarification of terms used in the thesis

| | |
|-----------------------|--|
| Well-being: | A state of happiness and enjoyment, eudemonia. In the context of this study well-being relates particularly to experiences in the process of learning as highlighted in the work of Laevers (1994). |
| Physical Literacy: | ‘The motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life’ (IPLA, 2014). |
| Physical Education: | Planned, progressive learning that takes place in school curriculum timetabled time, is delivered to all pupils and involves learning through, in and about movement. |
| Physical Development: | One of seven areas of learning in the Foundation Phase Curriculum that focuses on increasing skill and performance of the body in co-ordination, gross and fine motor skills, control, muscle tone, tension and balance, sensory awareness, use of a range of tools and linking movements (DCELLS, 2008a). |
| Physical Activity: | In this study physical activity is defined as a lack of sedentary behaviour, where children are not sitting at desks and are moving as part of their learning experience. |

Chapter 1. Introduction

The desk as a technology for learning is a contrivance aimed at controlling movement and attention in whichever setting it inhabits. As such, it points to the premise underlying education in many cultures: to learn we must be still.

Kentel and Dobson (2007:157)

With the introduction of the National Curriculum early childhood practices and government policy have been at odds. Play was seen as the enemy of education and was 'relegated to the margins of schools experience' (Wood and Attfield, 2005:19). Blenkin and Kelly (1994:1) argued that the introduction of the National Curriculum had reversed the direction of early years education away from advances towards a 'new and sophisticated form of curriculum.' However the introduction of the Foundation Stage in England in 2000 for three to five year old children saw connections made between playing, learning and teaching and an endorsement of a play-based curriculum (QCA/DfEE, 2000). Despite this, once children progress into reception class and into Key Stage 1 at age five the curriculum is dominated by lessons, subjects, timetables and tightly defined learning objectives and assessments (Wood and Attfield, 2005:26). This environment as highlighted by Kentel and Dobson (2007:157) is dominated by the desk and implies that to 'learn we must be still.' In September 2013 an open letter to the Telegraph Newspaper from over one hundred and thirty early childhood education experts called for a move away from formal education starting at aged four as is currently found in English schools (Telegraph, 2013). Whitebread and Bingham (2013:1) suggest that 'the English system – introduced in 1870 to get women back into work, rather than on the basis of any

educational benefit to children – is now causing profound damage.’

For children in Wales aged three to seven years, this approach to education no longer holds true. In one such school (one of the two featured in this study) the children are outside at playtime. The school sits on top of a hill overlooking the vast semi-circular sweep of a bay and the wind blows relentlessly across the schoolyard. Stretching to the horizon is the Irish Sea, huge tankers dotted in the bay appear like small fishing boats against the vastness of the landscape. The playground is exposed and trees, stunted by the constant sea breeze, struggle to grow. Willows planted as tunnels and small play-houses survive the relentless wind and break up the open space of the field. A trim trail weaves across part of the field to a grassy mound. The tarmac playground is painted with games and patterns and a small climbing frame fills the early years’ play area surrounded by a painted on ‘road’ for the bikes and tricycles to travel around. High-backed wooden seats split the yard giving one area for structured ball games and another area for children who want to play on space hoppers, wobble boards skipping ropes and hoops, or play hopscotch and catching games. Children are everywhere, none are still, they charge about, running, skipping, bouncing balls, climbing on the bouldering wall. Some are playing football, others tennis. There are children in the willow tunnels chasing one another whilst some balance, swing and climb on the trim trail.

The bell goes and the children head back inside. Initially this seems no different than any other primary school, the children are very busy but this is the case in many primary schools in the UK. However here the playground does not stay empty for long and even though the playtime has ended, small groups of children return to the playground each with a clipboard and pencil. They are followed by a teaching assistant and head off on a task. In the classroom the rest of the class are busy on different tasks. There is no silent quiet study, children

are not sitting at their desks, they are everywhere. Some are sitting and lying on the carpet playing with card games, others are sharing laptops doing number games, a group is working with a teacher sharing a book. Outside the children are running with their clipboards, they run in pairs searching for clues on a treasure hunt. There is constant chatter and discussion, the door is left open and children go in and out to collect things or move onto another activity. The overwhelming impression is one of noise and chaos, but closer inspection reveals that all the children appear to be engaged with a task, and noise is from discussion and chatter relating to their activities. They seem happy to work independently, in pairs and small groups collaborating on their tasks. The idea that the desk is 'a technology for learning' (Kentel and Dobson, 2007:157) could not be further from the reality. This is the Foundation Phase.

The past twenty years have seen unprecedented levels of change in educational policy (Ball, 2008; Coffield, 2006), with New Labour's ideas in the nineties of 'transformation, modernization, innovation, enterprise, dynamism, creativity and competitiveness' (Ball, 2008:14). In particular since gaining power in 1997 the Labour Government began a radical reform of early childhood services with a 'bewildering succession of new initiatives' (Jackson and Fawcett, 2009:117) However since devolution in 1999 there has been increasing divergence between the four nations of the UK. In 1999 Estyn in Wales reported on standards and quality in the Early Years, and although standards were found to be satisfactory or good in 85% of maintained settings, key aspects for improvement went on to form the basis of the Foundation Phase (Siraj-Blatchford *et al.*, 2005). This new curriculum evolved from proposals set out in The Learning Country (2001) document. It set out to develop and strengthen principles and practice from the Desirable Outcomes for children's learning before compulsory school age (2000) and linked these with programmes of study at Key Stage 1 to create a rich curriculum under 7 areas of learning

(DCELLS, 2008a). The core aims were further developed in *The Learning Country 2: Delivering The Promise*, which highlights their development from the United Nations convention on the rights of the child emphasizing childhood well-being.

In 2008, the Welsh Assembly Government began the implementation of the New Curriculum in Wales. Early Years and Key Stage 1 were replaced by a holistic play-based learning continuum for children aged three to seven called the Foundation Phase. The Foundation Phase reflects a worldwide trend within education systems of clustering subject matter into learning areas that extend beyond subjects (Macdonald, 2003). A range of international approaches to early years education influenced the development of the Foundation Phase, with ministers 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. The result was that 'Physical Education' as a separate subject on the curriculum in the Foundation Phase disappeared. For the first time since the recognition of Physical Education in the curriculum, children in Wales under the age of seven are no longer taught this as a subject.

When considering the importance of movement in child development, and the wider issue of physical literacy, this change in the nature of Physical Education for children under the age of seven may be deemed a cause for concern.

However, the play-based nature of the Foundation Phase advocates children learning through first-hand experiential activities (DCELLS, 2008a). Maude (2010:114) states: 'Play environments, both indoors and outdoors, play resources, both natural and manufactured, playmates, both adults and children, are key to the promotion of physical literacy,' which Whitehead (2014) defines as: 'The motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical

activities for life' (IPLA, 2014). With this definition in mind this research sought to explore whether the new curriculum with its balance of child-initiated play-based activities and adult-led focused tasks, which used both indoor and outdoor classrooms, would result in increased opportunities for developing the attributes of physical literacy.

To ascertain the contribution of this new curriculum to the development of children's physical literacy, the nature of the Foundation Phase, its aims and features as well as the process of implementation need to be considered. The implementation of the Foundation Phase gives a unique opportunity to study a 'naturalistic intervention' as it is implemented into school practice. As a naturalistic intervention the Foundation Phase is not an intervention designed specifically for this study. This is a government curriculum and as such mandatory in every school in Wales. Implementation of the Foundation Phase would have occurred regardless of this study. It is widely acknowledged that implementing a new curriculum is fraught with challenges. Research literature on educational innovation recognizes the difficulty in creating meaningful curriculum change in current school structures (Macdonald, 2003). With teachers in Wales under particular pressure to respond to poor educational performances in league tables, education reforms are under continuous scrutiny. Advocates of the Foundation Phase have so far been successful in retaining this approach to learning, which focuses on the process and not the product of learning. Sparkes (1990) identifies a lack of knowledge about the experiences of teachers, and raises the question 'what does change mean to the teachers in the classroom and on what basis do they accept or reject suggestions for change?' Pascale (1990), suggests that productive educational change is somewhere between over-control and chaos, or what Fullan (1993:20) describes as 'dynamic complexity.' Any development in social settings is in fact highly

complex and as the implementation of the Foundation Phase is a naturalistic intervention the reality is indeed multilayered and complex (Cohen *et al.*, 2011).

As well as the complexity associated with the study of a naturalistic intervention, the Foundation Phase is a complex phenomenon in itself. The Foundation Phase seeks to put the child at the heart of the curriculum; it requires a balance between child-initiated activities and those directed by practitioners, with an increased emphasis on the use of the outdoors (DCELLS, 2008a). In light of the nature of the Foundation Phase and the absence of Physical Education in its traditional form, this study aimed to investigate the contribution of this new holistic play-based curriculum to children's physical literacy and their wider learning. Identifying the features and outcomes of the Foundation Phase as interpreted by the teachers enabled this study to determine the fidelity of implementation and the contribution of the curriculum to the development of physical literacy. In order to achieve this, the study addressed four research questions.

Research question one

What are the main learning outcomes of the Foundation Phase in relation to physical literacy? And how are teachers interpreting these learning outcomes?

This question sought to identify the intentions of the policy-makers and the main features and aims of the Foundation Phase. Exploring the teachers' interpretation of the curriculum allowed the study to examine the fidelity of the implementation and ascertain whether the Foundation Phase was achieving its aims.

Research question two

To what extent are these outcomes being achieved?

Assessing the achievement of the outcomes in relation to physical literacy enabled this study to ascertain the impact of the Foundation Phase. The development of children's physical literacy was a particular focus of the study in light of the absence of Physical Education as a traditional subject.

Research question three

What processes might be impacting on the achievement of the main learning outcomes?

In order to gain a deeper insight into the implementation of the Foundation Phase this question explored the processes that contributed to the achievement of outcomes. As a study of a naturalistic intervention the focus was on the day-to-day experiences of the pupils and staff.

Research question four

How are physical literacy outcomes related to other learning outcomes across the curriculum of the Foundation Phase?

In times of accountability and pressures from Government to demonstrate pupil progress, any impact on pupils' learning is a key concern. Therefore this question sought to ascertain whether there was any relationship between pupils' wider learning and their developing physical literacy.

1.1 The Foundation Phase: underpinning concepts

The Foundation phase advocates a holistic child-centered approach. Well-being underpins the Foundation Phase, the learning being through 'first hand experiential activities with the serious business of 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, and that promote discovery and independence (DCELLS, 2008a). Access to space must be part of the daily routine in order to nurture mind-body growth (Ouvry, 2003). Support for the approach advocated by the Foundation Phase can be found in the research literature. In recent years 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 and Walters, 2007; Waite, 2010). Research has focused in particular on the natural environment, where learning incorporates increased levels of physical activity (Mygind, 2007), as well as improved motor development (Fjortoft, 2004). The landscape provides dynamic and rough play-scapes that challenge motor activity and obstacles that encourage a variety of bodily skills. The more complex and varied the area the more children will prefer it (Fjortoft, 2004; Fjortoft and Sageie, 2000). Not only do natural play spaces improve motor co-ordination, but also attentional concentration (Bird, 2007; Grahn *et al.*, 1997).

Contact with nature is needed to maintain mental health and 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 this as a 'Nature-deficit Disorder (which is) 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, 2005:36). Bird (2007) also makes a strong case for the importance of engagement with nature linked to a variety of issues. He identifies evidence that suggests nature impacts positively on children's concentration, reducing levels of stress and aggression. It can be used to treat children with poor self-discipline and ADHD (Attention Deficit Hyperactivity Disorder) as well as improve well-being and mental health. Louv (2005:105) describes this restorative quality of the environment as 'Nature's Ritalin.' This combination of

physical and mental health benefits associated with the outdoors as a site for learning highlights the potential impact of the Foundation phase on pupils' holistic well-being and as such on the development of physical literacy.

Maude (2010) suggests there is overwhelming evidence for the benefits of outdoor play for young children. Play is also the primary mode through which children learn about their bodies and movement capabilities, developing gross and fine motor skills (Gallahue and Ozmun, 2006). Although motor development happens through play, it is a misconception that through playing, physical development will simply occur naturally (Brock *et al.*, 2009). Free play alone is not sufficient for children to realise the full potential of their movement vocabulary (Maude, 2010). Progression to the mature stage of a fundamental movement pattern depends on a variety of factors, the environment, the child's maturation, and the conditions within the task (Gallahue and Ozmun, 2006; Pickup and Price, 2007). 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).

The play-based nature of the Foundation Phase and increased use of the outdoor environment suggests that children will be more active on a daily basis. Past research into daily physical activity indicates that there may be broader benefits from this, not only in the expected physical domain, with improved health and motor development (Fjortoft, 2004; Mygind, 2007), but also in the social, affective and cognitive domains (Kirk, 1989; Bailey *et al.*, 2009). The notion that Physical Education is more than the development of physical competencies has been much debated around the concept of 'learning to move and moving to learn' (Doherty and Bailey, 2003; Pickup and Price, 2007) and Doherty and Brennan (2008) highlight this point with their interpretation of the

subject as part of a process concerned with lifelong physical, intellectual, social and emotional learning accrued through a range of physical activities, in a variety of contexts. This point is further supported by the notion that one of the outcomes of Physical Education is physical literacy, which the Welsh Government recognises as important to a child's education as being literate and numerate (Physical Activity Task and Finish Group, 2013). Bailey *et al.* (2009) discuss the growing body of research that supports the notion that Physical Education leads to positive social behaviour and they further highlight 'there is a need to determine not only the product of participation but also the process of change' (Bailey *et al.*, 2009:12). Play literature also expounds the value of play in supporting intellectual, emotional and physical development alongside social development through which children learn cooperative skills (Broadhead, 2006; Jordan and Le Metais, 1997; Moyles, 2010; Pellegrini and Goldsmith, 2003). Play develops understanding of the self, as Broadhead (2004:89) explains, for children play is 'a holistic exploration of who and what they are and know' and it is how they explore who and what they may become. This understanding of play aligns with a monist philosophical perspective of 'viewing the person as essentially an indivisible whole', which is 'fundamental to the appreciation of the concept of physical literacy' (Whitehead, 2010:22).

Play enables children to explore the world through movement and early movement is required for the development of sensory integration, by which the brain learns to process information. Play provides the series of adaptive responses needed to make sensory integration happen, allowing children to develop awareness and understanding of their embodied dimension, a fundamental aspect of human nature (Ayres, 2005; Whitehead, 2010). Through constant interaction with the environment, each individual constructs their view of the world and themselves. When children become involved in an activity, they are fully engaged with all of their senses. During such levels of

holistic involvement children are gaining deep, motivated, intense and long-term learning experiences (Csikszentmihayli, 1979; Laevers, 1993). The development of confidence and self-esteem acquired through experience creates motivation to be active and persist with an activity, an attribute that is at the heart of physical literacy (Whitehead, 2010).

A child's experience of movement will play a pivotal part not only in shaping personality and feelings but also achievements, as higher abilities are built upon the integrity of the relationship between brain and body (Goddard Blythe, 2005). It is widely accepted that movement and gross motor development make an important contribution to the intellectual development of children, since the growth and development of the brain, body and feelings are inseparable (Ouvry, 2003; Pickup, Haydn-Davies and Jess, 2007). Whitehead (2010) supports this notion, highlighting embodiment as the wellspring of the intellect.

1.2 Structure of the thesis

The next chapter of the thesis (Chapter 2) will examine in depth the relevant literature in relation to the many influences on and aspects of the Foundation Phase as introduced above. The literature is drawn from the fields of curriculum change, Physical Education, physical literacy, child development and motor development, play and playful pedagogies and outdoor learning.

The implementation of the Foundation Phase in Wales gives a unique opportunity for an in-depth study into the implementation and impact of a new curriculum, a naturalistic intervention, where physicality is central to children's learning. This is a curriculum that has moved away from the view that 'to learn we must be still' and as such with so many aspects in this approach to children's learning the challenge of measuring impact in an experimental design is not feasible. As highlighted by Parlett and Hamilton (1972:9) the study of

educational innovation cannot be 'controlled, exact and unambiguous.' Added to this is that the Foundation Phase is described as a 'framework' (DCELLS, 2008a) and this language implies reduced levels of prescription. This is confirmed in Government guidance, which highlights the aims of the new curriculum to give greater control and responsibility to the schools, and in so doing give them the freedom to organize and implement the curriculum in the way that best suits their circumstances and needs (DCELLS, 2008b). Increased freedom in implementation brings the risk of slippage and the gap between the intentions of the policy-makers and practice is an issue that has been well-documented in literature in the field of curriculum change (Fullan, 1999; Sparkes, 1990; Stenhouse, 1975). Increasing complexity of change in a postmodern society means it is the combination of individuals and societal agencies that will make a difference (Fullan, 1993). Schools' interpretations and teachers' understanding of the outcomes of the Foundation Phase framework may vary considerably and because the interpretation of learning outcomes depends on existing knowledge there is a danger of misinterpretation (Hussey and Smith, 2002).

Inconsistencies of curriculum implementation are well-documented (Finn and Achilles, 1990; Glass and Smith, 1979; Mosteller, 1995) and therefore this study sought not to explore consistency of implementation, but the impact of the curriculum when it is done well. In order to achieve this, as outlined in detail in Chapter 3, two schools were identified for their good practice in the delivery of the Foundation Phase through purposive sampling. The schools were in contrasting locations. School A was a small school in a rural setting. Children were from a mixed socioeconomic background and came from a wide catchment area often traveling to school by bus. School B was a large urban school with children mainly from large housing estates surrounding the school with a poor socioeconomic background. These contrasting factors in the communities allowed the study to assess the impact of the curriculum in different settings. In

so doing, key features of the Foundation Phase were identified that could be used to ascertain the fidelity of implementation. In order to assess the impact of the Foundation Phase this study first sought to identify learning outcomes in relation to physical literacy. These were used to ascertain the impact of the educational change.

The Foundation Phase is a complex adaptive system, consisting 'of a number of components, or agents, that interact with each other' (Stacey, 1996b:10). With such a complex mix of influences in the Foundation Phase setting, in order to gain an insight into the implementation of the new curriculum as Johnston *et al.* (2007:116) suggest 'methodological pluralism rather than affinity to a single paradigm is the order of the day.' Therefore a three-phase 'complementarity' mixed-methods approach was used (Greene, 1989:126). This mixed-methods approach sought to capture the rich and varied nature of the children's learning experience in the Foundation Phase by generating data in a range of contexts and across time. As physical literacy is underpinned by a monist philosophy and as such is holistic in nature, the elements and attributes of physical literacy all contribute to, and are a result of, the development of the whole person. Therefore a combination of both quantitative and qualitative methods was used to capture data relating to the attributes across the time of the study in a variety of situations. Analysis of this data was used to develop a rich understanding of the children's developing physical literacy in the Foundation Phase. Chapter 3 outlines in detail the research methodology, methods and ethical considerations for this study.

Data for this study was generated over a two year period, during 2012-2013. Phase one involved the analysis of the Foundation Phase documentation and identification of the learning outcomes through semi-structured interviews with staff. The findings and analysis of this data are reported in Chapter 4 of the

thesis, outlining what the curriculum aimed to do and outcomes that were expected for the pupils. The findings from Chapter 4 were used to inform phases two and three of the research. The findings from phase two and three of the research are reported in detail in Chapters 5 and 6 of the thesis. Chapter 5 focuses on the experiences of the pupils, exploring whether the outcomes identified in phase one were achieved. Chapter 6 focuses on the processes that enabled the outcomes and experiences reported in Chapter 5. As the findings are reported they are discussed in relation to existing research and literature. The existing research and literature that relates to this study is explored next and seeks to provide a precedent for the generation of the research questions.

Chapter 2- Review of literature

The purpose of this chapter is to explore existing literature and research relevant to this study. The literature and research discussed here will set the context for the study and for the generation of the research questions as identified in the previous chapter (Chapter 1). This chapter explores the literature and research in the field of curriculum change and highlights the need to study the impact of change, what works and why, and the fidelity of implementation. Studying the interpretation and implementation of the Foundation Phase as a new curriculum locates this research in the field of curriculum change. The discussion relates in particular to the field of curriculum change in Physical Education and its contribution to the development of physical literacy.

The Foundation Phase, with its emphasis on early years pedagogy, play and outdoor learning, draws for its influences upon literature from the fields of early years education and play as well as from a range of international approaches. Therefore this chapter explores a broad and diverse range of relevant literature covering aspects of early child development, motor development, play, motivation, and open curricula. In so doing it highlights the possible implications of this new innovation on children's learning and development and particularly in relation to attributes of physical literacy. The requirement for pupils in the Foundation Phase to learn in the outdoors also locates this study in the field of outdoor education and in particular explores literature around motor development and natural environments. The range of literature included in this chapter illustrates the multi-disciplinary nature of the research and the

issues highlighted inform later discussions in relation to the findings and conclusions of the study.

The chapter is organised as follows:

- The first section of this chapter will explore the literature around the field of curriculum change and in particular, change in physical education, highlighting the concept of physical literacy and the Foundation Phase and physical literacy.
- The second section will examine the literature in the field of child development and motor development, in particular the role of movement in early childhood development and learning.
- The third section will explore aspects of the literature on motivation that relate to engagement in learning and how that relates in particular to the notion of play. It will examine the literature in relation to playful pedagogy, focusing on the open curricula that use this approach, which influenced the development of the Foundation Phase.
- The fourth section will also examine the literature and existing research around the role of the environment in learning with a focus on the role of the outdoors.

2.1 Curriculum change and implementation

This first section of the literature review deals specifically with the literature around curriculum change and implementation, with a particular focus on curriculum change in Physical Education and the emergence of physical literacy as an outcome of Physical Education.

The nature of curriculum depends on the perspective from which it is viewed. For some that is a written prescription of what schools should do, and for others

it is 'what happens to children in school as a result of what teachers do' (Kansas, 1958, cited in Stenhouse, 1975:2). What is valued and deemed appropriate for the curriculum is always 'a selection and organization of the knowledge available at a particular time' (Young, 1998:12). As such the study of curriculum has been complex, confusing and controversial, and has changed in its nature over the decades with developments in both theoretical and practical approaches (Pacheco, 2012). Greene, (1971, cited in Young, 1998:22) describes the dominant view of the curriculum in terms of 'a structure of socially prescribed knowledge, external to the knower, there to be mastered' and goes on to contrast this with her own phenomenological view of the curriculum as 'a possibility for the learner as an existing person mainly concerned with making sense of his own life-world', a view that resonates more with the 'how' of learning rather than the 'what' and one that is more in line with the notion of the physical literacy journey through life. It would however seem that the current curricular debates are around the question 'What knowledge is of most worth?' and there remain tensions between curriculum theory and curriculum development, in particular between the more theoretical and more practical within the field (Pacheco, 2012). Macdonald points out that 'underpinning curriculum reform is a contest over what is chosen, by what processes, by whom, with what intent, and with what result. Struggles over curriculum and its management are, in a sense, struggles over what education is for, and whose knowledge is of most worth—learners', parents', teachers', or curriculum authorities'?' (Macdonald, 2003:140). Postman (1995) also highlights that the knowledge of schools reflects the hegemony of a particular group/society/culture whilst marginalising minority and the marginalised views of other groups.

Education can be viewed as a vehicle for moral change and as society is healthiest when it is fair, education needs to create opportunities for all to

flourish, creating a healthier and more prosperous society (Fullan, 1999, 2003, Wilkinson, 1996, 1997). Fullan (2003:12) goes as far as to state 'the only measure that counts at the end of the day is whether the *gap* between high and low performers is explicitly reduced. This result is more profound for societal development than people realise.' This is a view of education that is of particular importance for this study as a key aim of the Foundation Phase identified by the Minister for Education is to reduce the gap between performers with this new approach to education, raising standards as the route out of poverty (Davidson, 2010). Stenhouse (1975:5) identifies a curriculum as 'the means by which the experience of attempting to put an educational proposal into practice is made publicly available. It involves both content and method, and in its widest application takes account of the problem of implementation in the institutions of the educational system'. However, a central problem in the process of curriculum reform is the difference between the ideas and the attempts to operationalise them. Stenhouse (1975:3) continues stating that this 'gap between aspiration and practice is a real and frustrating one', a notion supported by Bell (1987) who 'likens the area of curriculum change to an elephants graveyard littered with the reminders of experiments that finally failed' (cited in Sparkes 1990:3) This rather depressing view is further supported by Fullan (1999:66) who notes that 'we are at the very early stages of appreciating the nature and complexity of educational reform on a large scale' and drawing on further evidence from a range of countries (Evans *et al.*,1987; House, 1979; Kirk, 1988; Rosario, 1986; Tangerud and Wallin, 1986; Tinning, 1987, 1988) Sparkes (1990:6) questions whether there has been any real improvement in the experiences of children suggesting 'there has been a great deal of innovation without change and change without innovation', possibly due to the fact that 'reforms rarely unfold as intended (Fullan, 2003: xi). These comments all beg the question: what has been happening in the many attempts at reform that have so often failed and left us with such little knowledge of how

to implement lasting change?

Fullan and Pomfret's (1977:336) study of extensive curriculum innovations concludes that 'implementation is not simply an extension of planning and adoption processes. It is a phenomenon in its own right' and it 'refers to the actual use of an innovation or what an innovation consists of in practice.' They identify several reasons why it is important to focus on implementation: firstly in order to know what has changed we need to conceptualise and measure it directly. This is crucial as the study of curriculum is concerned with the relationship between the curriculum as intention and as reality (Stenhouse, 1975). Secondly, investigating implementation directly identifies some of the most problematic aspects of bringing about change so we begin to gain an understanding of the reasons why so many educational changes fail to become established and in so doing 'test how far and why practice has fallen short of hopes' (Stenhouse, 1975:3). A third reason for examining implementation separately is 'to interpret learning outcomes and to relate these to possible determinants' (Stenhouse, 1975:339). Stenhouse's analysis draws attention to the often hidden barriers which can and do resist the process of new curriculum implementation and act as a filter between curriculum innovation and implementation. Although these issues were highlighted by Stenhouse and Fullan and Pomfret in the 1970s, in revisiting his earlier work Fullan's recent work acknowledges that even though forty years have passed 'we are still not behind the classroom door on any scale' (Fullan, 2008:121) and as highlighted by Macdonald (2003), Schubert (2008) and Panchenko (2013) many of these issues are still relevant today. Indeed, Thorburn and Allison (2013:418) in their study of outdoor learning in schools in Scotland's new Curriculum for Excellence found only limited innovation and 'considerable evidence of curriculum stasis'.

Studies of curriculum implementation tend to follow one of two main orientations. The first assesses the fidelity of the implementation, exploring the extent to which the innovation corresponds to the intentions of those who conceived it and assumes that experts outside of the classroom developed the curriculum, or innovation (Fullan and Pomfret, 1977). The other main orientation found in some studies is directed at analysing the complexities of the change process such as how innovations become developed or changed during the process of implementation, known as mutual adaptation (Fullan and Pomfret, 1977; Snyder, Bolin and Zumwalt, 1992). In this second orientation, Fullan and Pomfret (1977:361) suggest 'a curriculum change consists primarily of five dimensions: changes in (a) subject matter or materials, (b) organizational structure, (c) role/behaviour, (d) knowledge and understanding, and (e) value internalisation.' These numerous influences on the process highlight the complexity of the phenomenon and how it is difficult to be explicit about the operational characteristics of an innovation. It would seem that curriculum study has moved a long way from a Tylerian (Tyler, 1949) rationale of prescribing curriculum to schools (Morrison, 2003; Pacheco, 2012), to the notion of complexity theory that Morrison (2003) and Jess *et al.* (2011) explore as a potential lens through which to examine curriculum developments.

As Ovens *et al.* (2013) explain, the notion of complexity is in itself complex and as such hard to define. They draw on the work of Davis (2008) and Davis and Phelps (2005) describing complexity thinking in three inter-linked dimensions. First, it is 'transphenomenal', meaning there is a requirement to study it on different levels. Second, it is 'transdisciplinary,' meaning there is a requirement to acknowledge the need to study its discipline plurality. Third, it is 'interdiscursive,' meaning there is a need to recognise how different discourses intersect, overlap and interlace (Ovens *et al.*, 2013:3). Fullan (1999:4) expands on the nature of complexity theory, stating that 'the link between cause and

effect is difficult to trace'. As understanding develops of the multi-layered interactive and self-organising nature of modern schools, not to mention the many influences surrounding curriculum design and implementation, it would seem that complex is 'an apt term to describe our understandings of school phenomena' (Ennis, 2013:14). Schools are continuously changing organizations and as such are likely to be complex adaptive systems consisting of 'high degrees of internal interaction and interaction externally (with other systems) in a way that constitutes continuous learning' (Jess *et al.*, 2011:23). This is where 'complexity is situated between order and disorder' (Ovens *et al.*, 2013:4), too much structure stifling change and too little resulting in chaos (Fullan, 1999:5). Therefore as Brown and Eisenhard (1997:32) suggest 'the key to effective change is to stay poised on the edge of chaos'. Ironically, this is precisely the place where governments and parents least want the education process to be located. They aspire to stable and 'proven' curricula driven by a culture of prescribed outcomes and achievement.

Given the complexity of this process it is unsurprising that studies on factors effecting change show that the impact is inconsistent, reinforcing the notion that implementing effective change is highly complex and little understood (Finn and Achilles, 1990; Gamoran, 1987; Glass and Smith, 1979; Mosteller, 1995; Newmann, Marks and Gamoran, 1995; Oakes, 1986; Slavin, 1987; Sorenson and Hallinan, 1986). Fullan's work from the nineties highlights that by having a greater understanding of the complexities of the process of change, then organizations will be more able to put systems in place to cope with 'staying poised on the edge of chaos' (Brown and Eisenhard, 1997:32; Fullan, 1999:5). School reformers and practitioners make the over-simplistic assumption that changes in structure produce changes in teaching practice and that this in turn produces changes in students' learning. However, research studies into these connections present a much more pessimistic and complex view (Elmore, 1995).

Fullan and Pomfret, (1977:379) reflecting on the study by Gross *et al.* (1971) of ineffective implementation highlight how the extent to which an innovation will be implemented as planned depends upon the extent to which users are clear about it, the degree to which they are competent to perform it, whether appropriate materials are available, whether organizational structures are congruent with the innovation, and the extent to which users are motivated. In their words, what is crucial in implementing curriculum change is the established 'organizational climate' of the school or classroom (the adopting unit) and not just 'whether' but also 'how' implementation occurs. They suggest that it is the organizational capacities of the school or classroom that are even more important for successful curriculum implementation than the actual innovation itself (Fullan and Pomfret, 1977:383). This capacity for change is dependent on many factors and there is no single process for improvement that can increase this capacity. Instead, there needs to be a repertoire of processes and elements of strategies that can be applied according to need, with the eventual aim of school improvement being to enable the school to solve its own problems (Spalding *et al.*, 2001). If an organization is to become creative and innovative in order to develop, 'then it may have to expect to be pressed towards self-organised criticality'. It must give teachers and children 'support and space to develop, to change and to be creative and imaginative' (Morrison, 2003:286). This process of self-directed decision-making where schools tailor their curricula to meet the immediate and local needs of the children and communities they serve lies at the heart of the Foundation Phase. This was evident in this study where the two schools chosen for the research were receptive to the curriculum and had used the support mechanisms in place to implement the Foundation Phase effectively, as evidenced by inspection reports of their good practice.

Morrison (2003:287) argues that 'change is addressed through curricula and pedagogy which emphasise emergence, self-organization, feedback, connectedness, relationships, collaboration, communication, and order without control, rather distributed control.' Even where there is a high level of prescription in curriculum innovation, 'transformation of reforms is inevitable' (Kirk and Macdonald, 2001:565) where 'what is produced in schools may itself be subject to re-contextualising principles arising out of the specific context of a given school and the effectiveness of the external control over the reproduction of the official pedagogic discourse' (Bernstein, 1990:1). Young (1998:22) highlights that 'the National Curriculum has to be interpreted by teachers to become a reality in schools and that it is in that process of interpretation that the scope and need for teachers' professional autonomy can be found.' Drawing upon the ideas of Goodson (2009), Pacheco (2012:10) comments that 'Goodson believes what is more important is to understand to what extent curriculum's social construction is influenced by the professional lives of teachers. Therefore, agency is not in the school or in the classroom but in the teacher.' In light of this, Deci (2009:244) highlights the need for flexibility in the process of reform, arguing that if the climate is autonomy supportive 'people will experience greater need satisfaction and will be more likely to internalise and endorse the reform.' Exploring this key dimension of individual teacher agency in relation to curriculum implementation is a focus of this study.

Teachers have both explicit and tacit knowledge. Tacit knowledge comes from experience and previous opportunities, which is an integral part of the living system and cannot be underestimated in terms of its contribution to the change process (Fullan, 1999). However, Kirk and Macdonald (2001) when studying the contribution and role of the teacher in education reform suggest that this deep connection to one's own context also restricts the contribution to the recontextualising field of curriculum development (Berstein 1990). They draw

attention in particular to how the ‘teachers’ authoritative voice is rooted in the local context of implementation’ (Kirk and Macdonald, 2001:565). They also caution, as highlighted by Deci (2009), that ‘reforms that seek to by-pass teachers or to be overly prescriptive will not succeed’ (Kirk and Macdonald, 2001:3). However a move to less prescriptive models of curricula require teachers to be agents of change, and this raises concerns about the fidelity of implementation and levels of transformation of policy (Bekalo and Welford, 2000; MacLean *et al.*, 2013; Priestley 2010). This is of particular relevance to this study as the Foundation Phase is a framework for guidance rather than a prescribed curriculum and as such has less prescription than some other curricula. The guidance for its implementation required schools to interpret the curriculum in the way that best suits their context (DCELLS, 2008b), raising questions about fidelity of the innovation to the principles of the Foundation Phase approach. Although there is a level of freedom in the interpretation of the Foundation Phase for each school context, there remains a need for schools to reflect the philosophy that underpins the Foundation Phase and to use a pedagogical approach that is reflective of a play based curriculum.

In seeking to become professional learning communities, schools need to develop a reflective, collaborative dialogue where they learn to study and use data, by reflecting on practice, children’s learning and children’s achievement (Fullan, 1999). The process of implementation needs to be a combination of top down and bottom up innovation, with structure, connectedness and systems (Fullan, 1999; McGinn, 1999). Ball, Maguire and Braun (2012: 2) discuss the complex and diverse ways that education policies are made sense of in schools highlighting that teachers ‘enact’ rather implement policy. In considering the key role of the teacher in policy enactment and curriculum implementation, Jess, Keay and Carse (2014) argue that professional development needs to acknowledge complexity theory. ‘Professional learning should not be seen as an

isolated experience, but one that is connected to the immediate class, the school and nested environments' (Jess, Key and Carse, 2014:12). This notion of professional development embedded in the school resonates with Macdonald's (2003:143) call for a post-modern curriculum that reduces bureaucracy and control in a culture of collaboration and construction of learning where the students are viewed as 'knowledge-producers rather than knowledge-consumers', a view strongly supported by Jess *et al.* (2011:180) who recognise a 'constructivist notion of active learners' in their description of learning as 'a collaborative endeavour reflecting the complex interactions within the different groups of children, teachers, head teachers, local authority managers and politicians'. In Doll's (1989:250) view, this approach to learning will 'accept the student's ability to organise, construct and structure' as 'a focal point in the curriculum' resulting in an education system as called for by Petrie (2005) that promotes flexibility, adaptability, autonomy and responsibility through relevant, authentic holistic learning experiences. This however has been unpopular in the UK since the inception of the National Curriculum with its emphasis on testing and results in Key Stage 1 and two. Therefore the Foundation Phase with its child-centred focus on authentic learning processes as opposed to outcomes is a radical shift from the broader culture of education curricula in the UK.

2.1.1 Curriculum change in Physical Education

The challenges of curriculum reform are at the heart of enduring debates surrounding Physical Education curricula, with many in the field highlighting the need for change in light of physical education practices that are seemingly dated and lack authentic learning experiences (Charles, 2012; Ennis, 2013; Kirk, 2010; Kirk and Kinchin, 2003; Locke, 1992; Penny and Chandler, 2000). Kirk (2010:8) highlights how an obsolete form of the subject that he describes as 'Physical Education as sport techniques' is highly resistant to change and research by MacLean *et al.* (2013) examines the many challenges faced when

trying to ensure that changes intended by policy makers move beyond the status quo. They suggest that for new systems and structures to replace the old, 'those concerned with Physical Education at the school and the policy level need to be clearer about the educational 'purpose' of Physical Education' (MacLean *et al.*, 2013:1). Corbin (2002) also highlights these challenges suggesting that Physical Education has much to offer society as an effective agent of change, but cautioning that 'lack of clear and unambiguous objectives for Physical Education will render it ineffective as an agent of change in the future.' He states that 'a clear purpose within Physical Education is essential if Physical Education is to be an effective agent of change in society' (Corbin 2002:182). Kirk (2010:9) further asks the question, 'how can a subject that continues to be practiced in a form that was considered cutting edge over 60 years ago fulfil such ambitions?' and he suggests three different futures for Physical Education, 'more of the same, radical reform and extinction' (p138).

As part of the debate that surrounds the future of Physical Education is the on-going concern about the nature of what is done in the name of Physical Education (Brown, 2013; Jewett, 1995; Kirk, 2010). A growing body of literature calls for the learning in Physical Education to be authentic, relevant to learners and holistic in nature (Brown, 2013; Haerens *et al.*, 2011; Kirk, 2010; Jess *et al.*, 2011; 2013; Stolz, 2013; Whitehead, 2010). This has been the case in Scotland where the Developmental Physical Education Group (DPEG) has developed a 'Connected 3-14 Physical Education curriculum structured around core learning, developmental applications and authentic applications' (Jess *et al.*, 2013:28). A further example of such an authentic experience is Sport Education (Siedentop, 1994), where the use of a structured model gives 'alignment' between Physical Education and 'the sport dimension of physical culture' (Kirk, 2010:129). Haerens *et al.* (2011:324) draw from the work of Jewett *et al.* (1995) and Metzler (2005) to develop the concept of models based practice and

instructional models, preferring the term 'pedagogical models, which highlights the interdependence and irreducibility of learning, teaching, subject matter and context.' Casey (2012:2) suggests that 'models-based practice (MBP) seems to be the 'bookies favourite' to replace traditional teacher-led practice in Physical Education,' but he also cautions along with other advocates of MBP (Haerens *et al.*, 2011; Lund and Tannehill, 2011; Metzler, 2000; Siedentop and Tannehill, 2000) that teachers need to begin the change in their practice from 'championed 'curricular models [that] have been developed, tested, refined, and further tested in a variety of school settings.' (Casey, 2012:2). This supports Corbin's call for further research into the effectiveness of Physical Education programmes who stated:

It is interesting to me that we, as a field, know more than ever before about the benefits of physical activity. At the same time, we know very little about the benefits of Physical Education. It seems to me that a very important change for the future would be to focus our professional research efforts on demonstrating which programs work. (Corbin 2002:192)

Corbin's call for more research in to the effectiveness of programmes is of particular significance for this study, which in exploring the impact of the Foundation Phase on physical literacy, seeks to ascertain the effectiveness of a new and innovative curriculum based on play and outdoor learning pedagogies rather than Physical Education as a subject.

Without the clear articulation of the wider aims of Physical Education, Maclean *et al.* (2013) raised concerns about misinterpretation of the purpose of Physical Education being about changing public health, a role that has proved to be beyond the capacity of Physical Education and an approach to the subject, that

reflects the 'academisation' of Physical Education and extrinsic motivation for the subject as contributing to learning in other fields (Green, 2005; MacNamee, 2005). This dualistic view focusing on cognitive and physical domains separately ignores the true potential of Physical Education to contribute holistically to our development and understanding of the self (Brown, 2013; Stolz, 2013). Brown (2013) in revisiting Arnold's (1979) work explores the lack of true representation of Arnold's 'in movement' in modern curricula and highlights that 'slippage' (Penny and Evans, 1999) from the intentions of policy leads to the intrinsic value of movement getting lost. This has been particularly evident in the modern National Curriculum with its culture of children being passive and inert rather than active and embodied. The Foundation Phase as a play-based curriculum has movement as an integral part of children's learning and this study seeks to ascertain the impact of this approach on children's holistic embodied experiences, and as such the development of their physical literacy.

2.1.2 Physical literacy

Contributing to the debate about the nature and purpose of Physical Education is the concept of physical literacy (Whitehead, 1990, 2001a, 2001b, 2006, 2010, 2013). Whitehead (2010) highlights four key influences for the development of the concept. Firstly she expresses the philosophical belief from existentialism and phenomenology that embodiment is central to human existence. Bresler (2004:7) in advocating for embodiment in teaching and learning defines embodiment as 'the integration of the physical or biological body and the phenomenal or experiential body' suggesting 'a seamless though often elusive matrix of body/mind worlds, a web that integrates thinking, being, doing and interacting within worlds' (Hocking *et al.*, 2001: xviii). Although embodiment is seen as important in many ancient cultures and philosophies such as Hinduism, Yoga, Celtic and Buddhist traditions, Western philosophy has largely

condemned the body until Dewey (1938) who was at the forefront of the progressive education movement at the start of the twentieth century and later Lakoff and Johnston (1999), Shusterman (1997, 2004, 2008) and Bresler (2004). However more recently and of particular importance for this study, Whitehead (2010:23) in developing the concept of physical literacy highlights the existentialist belief that ‘individuals create themselves as they live in the world’ and she emphasises the underpinning philosophies of monism and phenomenology as central to physical literacy, advocating the notion of embodied learning and a recognition that ‘you have not “got” a body but rather “are” your body.’ Although Brown and Payne (2009:419) suggest ‘the contribution of phenomenology to the Physical Education discourse is and remains on the margins’, there is a growing discourse in the fields of Physical Education and Philosophy concerned with embodiment in Physical Education, sport and the construction of the self (Birch, 2009; Block and Weatherford, 2013; Brown and Payne, 2009; Brown, 2013; Hopsicker, 2009; Sheets-Johnstone, 1999; Stolz, 2013). Stolz (2013:950) in particular is critical of the academisation of Physical Education suggesting that this has led to a disconnect in Physical Education from its purpose ‘to develop each person’s whole being’ and both Stolz (2013) and Whitehead (2010) draw on the work of Merleau-Ponty who argues humans do not view the world from outside, but are themselves part of it and as such are ‘beings-in-the-world’ (Merleau-Ponty, 1962:58). As such humans ‘create themselves as they interact with their surroundings’ and are ‘forever in an active relationship with the world known as intentionality,’ which is ‘our restless drive to perceive and respond to the world’ (Whitehead, 2010:26). Whitehead (2010:26) further explains that ‘the intentionality in which our embodiment plays the leading role is known as operative intentionality.’ This is of particular significance for this study in relation to the nature of the Foundation Phase as a play-based curriculum, where children’s operative intentionality is the means for them to learn about

the world and their place as part of it. Indeed, young children at play is perhaps one of the most obvious examples of the innate drive to interact with the world where the 'intimate relationship between perception and movement' function inseparably as children construct their understanding of themselves as 'beings-in-the-world' (Merleau-Ponty, 1962:58; Whitehead, 2010:27).

Stolz (2013) suggests that this lack of connection to the world as a holistic being in the traditional curriculum may be why Physical Education has lost meaning for some students. Learning is seen as external and disconnected, rather than embodied where the experiences 'are humanising and provide authentic opportunities to concretely reinforce the point that a person's essential being is more than just his or her rationality he or she is a being-in-the-world' (Stolz, 2013:959). This developing discourse around the nature of Physical Education and the need to recognise embodiment highlights Physical Education's important role in the development of physical literacy. Nyberg and Larsson (2012:2) also highlight the increasing interest in 'the intrinsic values of moving and movements in the context of learning in Physical Education.' Drawing on the work of Kentel (2010), Kentel and Dobson (2007), Whitehead (2005, 2010), Rønholt (2002), Payne and Wattchow (2009) and Brown and Payne (2009) they emphasise the 'phenomenological as well as the existentialist approach to understand 'the moving body' and the 'crucial importance' of this for the 'ontological and epistemological foundations for pedagogies in Physical Education' (Nyberg and Larsson, 2012:2). Indeed both Brown (2013:21) and Whitehead (2013) in relating to the 'Arnoldian' conception of education 'in movement' highlight the need for Physical Education to emphasise the value of movement for movement's sake rather than the justification of the subject for its contribution to other domains (Bailey *et al.*, 2009). This identifies the need for recognition of 'the intrinsic values and qualities of human movement' and consideration of the 'implications for meaning and meaning-making in Physical

Education practices' (Nyberg and Larsson 2012:2). When considering the important role that Physical Education plays in the development of physical literacy, the introduction of the Foundation Phase as a curriculum with no subjects and as such no Physical Education may cause concern. However, although the links between Physical Education and physical literacy are strong, physical literacy develops from broader and more varied experiences both within the curriculum and from beyond the curriculum. In light of the potential of play for operative intentionality, this study sought to explore the impact of the varied experiences in the Foundation Phase on the development of children's physical literacy.

As the concept of physical literacy is underpinned by the philosophies of monism, existentialism and phenomenology, it identifies embodied experience as central to all of human existence. Whitehead (2013:24) explains, 'our embodied dimension is a human dimension of incalculable significance':

The concept of physical literacy underwrites the key role that the embodied dimension plays in life as we know it. In the context of our nature as beings-in-the-world physical literacy affords us an essential avenue of interaction without which we could not realise our potential as humans. Physical literacy supports the view that we should celebrate our embodied capability, a capability that needs no justification beyond its unique and indispensable contribution to human life. (Whitehead 2013:27)

This emphasis on the importance of the embodied dimension highlights the significant impact physical literacy can make to education and supports Stolz's (2013:959) call for 'greater recognition to be given to the role that embodiment and corporeal movement plays in student learning.' The development of

physical literacy is a necessary part of the curriculum as 'it is the whole person not just the mind that goes to school' (Stolz, 2013:959).

Almond (2013:34) supports this notion as he explains the value of physical literacy as fostering a fundamental human capability 'without which we could not develop as human beings', and 'which has the potential to enhance and enrich the quality of our lives'. Almond (2013) further discusses the need for learners to develop an understanding of the value of purposeful physical pursuits, a level of understanding that comes from authentic meaningful experiences. Shusterman (2004:51) in his writings on somaesthetics recognises the importance of the body as a 'locus of sensory-aesthetic appreciation and creative self-fashioning', highlighting how concern should not simply be with the body's external form, but with its 'lived experience', explaining that 'somaesthetics work toward improved awareness of our feelings, thus providing greater insight into both our passing moods and lasting attitudes' (Shusterman, 2004:52). This awareness of self is crucial if learners are to value themselves as embodied, as Walsh (2004:108) tells us 'not every child can be a dominant athlete, but every child can have an athletic self' and it is through the recognition and understanding of this that children progress through their physical literacy journey.

The concept of physical literacy is not new, indeed Whitehead (2001a:1) points out that, 'it was used in a UK Sports Councils flier in 1991 that stated 'Physical Education creates literacy in movement, which is as vital to every person as literacy in verbal expression itself'. Whitehead has since opened the debate on this subject, and it is now recognised in literature, research and policy across the world as an outcome of Physical Education (Hardman, 2011; Talbot, 2007). This said, 'physical literacy is much wider than Physical Education and encompasses all participation in physical activity throughout the lifecourse'

(Whitehead 2013b:30). Whitehead (2014) highlights this in the definition of physical literacy, which 'can be described as the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life' (International Physical Literacy Association (IPLA), 2014)

Whitehead highlights how individuals making progress on their physical literacy journey demonstrate the following attributes:

1. The motivation and confidence to capitalise on innate movement/physical potential to make a significant contribution to the quality of life. All humans exhibit this potential; however its specific expression depends on individual endowment in relation to all capabilities, significantly movement potential, and is particular to the cultural context.
2. Movement with poise, economy and confidence in a wide variety of physically challenging situations.
3. Sensitive perception in 'reading' all aspects of the physical environment, anticipating movement needs or possibilities and responding appropriately to these, with intelligence and imagination.
4. A well-established sense of self as embodied in the world. This together with an articulate interaction with the environment engenders positive self-esteem and self-confidence.
5. Sensitivity to and awareness of embodied capability, leading to fluent self-expression through non-verbal communication and to perceptive and empathetic interaction with others.
6. The ability to identify and articulate the essential qualities that influence the effectiveness of movement performance, and an

understanding of the principles of embodied health, with respect to fundamental aspects such as exercise, sleep and nutrition.

(Whitehead, 2013b:28)

Although all of the above attributes are important in their contribution to physical literacy, 'motivation, confidence and physical competence, and effective interaction with the environment are the three attributes that form the kernel of the concept and are mutually reinforcing' (Whitehead, 2010:14). Whitehead (2013b:30) further highlights motivation and confidence as, 'at the heart of the concept' and whilst acknowledging that these arise on account of improving physical competency stresses that, 'this competency on its own does not constitute physical literacy'.

Physical literacy has significant value as it has 'the potential to enhance and enrich the quality of lives' (Almond, 2013:34) by enabling people to maintain active, varied and rewarding lifestyles, developing self-esteem and improving well-being (Almond, 2013; Whitehead, 2013b). Indeed Whitehead (2010:33) suggests that by exercising and challenging the embodied dimension 'we celebrate the roots of our being, the wellspring of many of the other capabilities' which can be 'a self-affirming experience' contributing to 'self-realisation'. She further states that 'physical literacy is not a state that is reached' but 'is best seen as a journey, a journey unique to each individual' (Whitehead, 2013:29), however as Taplin (2013:56) explains 'some people mistakenly see physical literacy as an end point.' Despite Whitehead and Murdoch (2006) identifying six stages through which the physical literacy journey travels, each individual passes through this journey in different ways and at different rates. Therefore there is no final point and physical literacy is a journey that lasts throughout the life-course (Almond, 2010; Taplin, 2013; Whitehead, 2010; 2013b.).

The foundations of this journey begin at birth with the establishment of a movement vocabulary. The perception that the importance of early movement experiences was being forgotten was a second influencing factor in the motivation for Whitehead's development of the concept of physical literacy and Whitehead's work draws on a growing body of empirical evidence that supports 'the fundamental importance of movement development' (Ayres, 2005; Goddard-Blythe, 2005, 2013; Maude, 2010, 2013; Whitehead, 2010:3). The early movement vocabulary is founded on the movement competences that a young child develops through growth and early movement experiences such as rolling, crawling, grasping (Whitehead, 2010). This movement vocabulary is refined by the application to these early competences of movement capacities, which Whitehead describes as:

Simple, such as balance and co-ordination and flexibility;
Combined. For example, poise, which requires balance and core stability and agility, which combines flexibility, balance and co-ordination;
Complex, involving further combinations of capacities; for example, hand-eye co-ordination needing orientation in space, agility and dexterity.

(Whitehead, 2010:45)

This stage of the physical literacy journey is of particular significance for this study, as pupils in the Foundation Phase will be moving through this stage and applying these capacities to general movement patterns and then beginning to refine these into techniques (Whitehead, 2010). The Foundation Phase is for pupils aged three to seven years of age so they will be developing through all of these stages. Gallahue *et al.*, (2012:50) also identify stages of motor development, identifying the stage relevant to the Foundation Phase for pupils

aged three to seven as the 'Fundamental Movement phase.' They suggest three stages, 'initial, aged two to three years, emerging elementary stage, aged three to five years and proficient stage aged five to seven years' (Gallahue *et al.*, 2012:50). With the Foundation Phase including learners in all of these stages of development, the role of the curriculum in supporting this early movement is crucial. The process of education is society's best vehicle through which the physical literacy journey is initiated and young children are culturalised into being active individuals. Setting a norm of activity for the rest of their life at this early age is crucial and as such it is essential that early educational experiences are embodied and active. With much of this development traditionally supported through Physical Education the absence of this subject in the Foundation Phase may have implications for the development of children's early movement and physical literacy. Child development and the importance of movement will be further discussed later in this chapter.

2.1.3 The Foundation Phase and physical literacy

Without the foundations of movement in the Foundation Phase and primary school curriculum, there is a danger that young people will not have the physical competence, confidence or motivation for engaging in physical activity. This growing concern about the lack of physical activity as part of people's lifestyle was a third factor that motivated Whitehead's development of the concept of physical literacy. Although this study is concerned with the development of physical literacy in young children, Whitehead's work recognises the importance of physical activity throughout life as 'having significantly beneficial effects on adults, including the older population' (Whitehead, 2010:3). Research has long suggested links between early physical competence and later engagement in physical activity (Seedfelt, 1980; Clark and Metcalfe, 2002) and more recently the work of Stodden *et al.*, (2008) has highlighted the relationship between competence, perceived competence and physical activity. Indeed the

importance of how children engage in Physical Education in relation to developing a perception of self (Harter, 1999) was a fourth concern that influenced Whitehead (2010:4) in developing the concept of physical literacy. The growing trend in Physical Education of focusing on elite performers to the detriment of pupils who did not have outstanding ability raises concerns about the engagement of all pupils in meaningful Physical Education experiences and as highlighted by Brown (2013) and Stolz (2013) questions the ability of Physical Education to provide meaningful, authentic embodied learning opportunities. Focusing on the development of physical literacy will require a more inclusive approach to Physical Education, which may, as in the Foundation Phase, be delivered in areas of learning and not in traditional subjects.

2.2 Child development and motor development

Following on from the first section of this review of relevant literature, that looked at the implementation of curriculum change general, curriculum change in physical education specifically and the emergence of physical literacy, this second section examines literature in the field of child development and motor development, in particular the role of movement in early childhood development and learning.

As highlighted by Whitehead in the development of the concept of physical literacy, the importance of the very early movement experiences cannot be underestimated. Sheets-Johnstone (2000:344) explains that in the early months of life 'we were all apprentices of our own bodies: we learned our bodies, and learned to move ourselves,' but also alongside and consequent to this we learned an understanding of the bodies and movements of others. Whitehead highlights literature that links embodiment to intellect, such as Clark (1997) who 'suggests that cognitive development cannot be understood in isolation

from children's intimate relationships with the world via their embodied dimension' (Whitehead, 2010:34). A growing body of research identifies the importance of physical interaction in early development. Ayres (2005), Goddard-Blythe (2005, 2013), Kirby and Drew (2003), and Maude, (2010, 2013) all highlight the need for good early movement experiences for effective sensory motor integration. At birth an infant has a series of reflexes that are designed for survival, but also for early training for more complex actions (Goddard-Blythe, 2013). Although maturation of the nervous system is hard wired in a healthy infant brain, this maturation is 'inter-dependent with physical interaction with the environment, social engagement' and early adaptive responses (Ayres, 2005; Goddard-Blythe, 2013:9). Ayres (2005:7) explains how mental and social functions are 'based upon a foundation of sensory motor processes,' and that higher intellectual functions 'develop better if the sensory motor functions are well developed' (p24). Many programmes such as 'Brain Gym' and 'Project SPARK' use movement in schools to enhance concentration and claim to improve academic performance (Dennison and Dennison, 2010; Sallis *et al.*, 1999) with more recently Donnelly *et al.* (2013) studying the links between physical activity and academic achievement with studies suggesting that increases in motor competence are linked to improved academic achievement (Hansen *et al.*, (2010). As Hannaford (2005:35) explains 'nerve networks grow out of our unique sensory experiences, laying down intricate patterns that govern all our higher level brain development'. These multi-sensory experiences and interaction with the environment are gained primarily through movement. VanPragg *et al.* (2002) identified in their research that co-ordinated, balanced movements appear to stimulate production of neurotransmitters, such as dopamine, which stimulate growth of existing nerve cells and increase the number of new nerve cells and connections in the brain. Ratey and Hagerman (2008:7) highlight the impact of movement on the brain in their claim that 'exercise has a profound impact on cognitive abilities and mental health,' a view that would

appear to be well founded when considering that ‘exercise can increase levels of brain-derived neurotrophic factor (BDNF) and other growth factors, stimulate neurogenesis, increase resistance to brain insult and improve learning and mental performance.’ (Cotman and Bertchold, 2002:295).

Recent scientific research in neurology by the Institute for Neuro-Physiological Psychology, has found that children with delays in sensory-motor abilities found significant improvements in reading, writing, drawing and spelling when they followed a movement programme, and follow up studies three years later suggest gains were maintained over time (Jandling, 2003, cited in Goddard-Blythe, 2005:163). This research suggests that the brain needs time for developing through rich movement experiences. Exactly the type of movement experiences that are promoted by a flexible, research informed, play-based curriculum such as the Foundation Phase that forms the context for this study. Frith (2005:290) argues ‘there is no biological necessity to rush and start formal teaching earlier and earlier. Rather, late starts might be reconsidered as perfectly in time with natural brain and cognitive development.’ This is of particular interest for the Foundation Phase, which as a play-based curriculum advocates less formal approaches to learning until the age of seven.

Early movement is so crucial for later development, that a study of 15,000 children in the Millennium Cohort study (Hansen *et al.*, 2010) found that babies that were slow to develop motor skills relating to sitting, crawling, standing and taking their first steps were significantly more likely to be behind in cognitive development at five years of age, and that ‘delay in gross motor development is also a significant predictor of age five behavioural adjustment’ (Schoon *et al.*, 2010:247). Indeed if we consider Sheets-Johnstone’s (2000) view that we learn about the movement of others alongside ourselves, then it is crucial for the development of ‘reading’ the body language of others. Whitehead (2010:63)

highlights the work of Gallagher (2005) who suggests that children with poor interpersonal relationships, such as those with autism, may also have poor motor abilities, or 'have less effective mirror neurons'. The mirror neuron system is 'motor resonance while observing others acting' and so has an important role in reading body language and non-verbal cues and as such social skills (Borghi *et al.*, 2012:5). This new and exciting research exploring the links between brain maturation and early years physical movement has real and tangible implications for the learning of many children commonly diagnosed as dyspraxic, autistic, uncoordinated or just clumsy. In this study attention is drawn to the impact of the play-based approach of the Foundation Phase on particular children identified by teachers/psychologists as being statemented or on the autistic spectrum. Standal and Engelrund (2013:158) also support the notion of learning from the 'bodily presence of others' and whilst exploring Merleau-Ponty's (1963:159) notion of intercorporeal learning explain that learning a new skill is not just observation, but rather it is 'an embodied social process of being with others in a joint effort of learning'. Movement is therefore an integral part of learning non-verbal communication from birth.

The ability of the newborn to hold its head up and follow the parent / caregiver with their eyes is important for the baby to focus on facial expressions (Kirby and Drew, 2003). This development of core stability for posture and development of muscle tone is vital for the infant to develop autonomous movement and the gravitational security needed for balance and spatial orientation (Goddard-Blythe, 2013). Of particular significance for this study is that Ayres (2005:24) identifies the third to seventh years (the age range of the Foundation Phase) as 'a critical period for sensory integration' the process that 'gives us information about the physical conditions of our body and the environment around us' (p5). Maude (2010:102) highlights that 'physical activity is the key stimulus to brain development' with Ratey and Hagerman

(2008:245) suggesting that ‘exercise cues the building blocks of learning’ as ‘growth development of the brain, body and feelings are inseparable’ (Ouvry, 2003:13). Ayres (2005:25) states that ‘seven or eight years of moving and play are required to give the child a sensory motor intelligence that can serve as the foundation for intellectual, social and personal development.’ As this is the age range of the Foundation Phase, the experiences of the children in this stage of their education are of particular importance for the foundations for physical literacy and as such children’s overall development.

2.2.1 Motor proficiency and fundamental motor skills

At the broader societal level, changes in lifestyle have serious implications. With early movement experiences playing such an important role in the development of movement competence, changes in society have implications for establishing the foundations of physical literacy (Maude, 2010). Concerns over infant cot death have meant infants have less time in a prone position, added to this gadgets that ‘help’ busy parents by occupying their children mean children spend long periods of time in ‘pod’ type carriers and chairs that support their heads and necks so babies do not have to learn to do this on their own (Kirby and Drew, 2003; Maude 2010; Palmer, 2006). Parental worries about safety in our increasingly ‘risk averse society’ (Gill, 2007) alongside loss of green spaces to play mean that children spend less time outside playing (Louv, 2005; Palmer, 2006). This loss of opportunity for physical activity can have implications for the development of physical literacy as early physical competence requires a broad movement vocabulary in both the categories of gross and fine muscle activity which Maude (2010:107) identifies in seven categories: ‘balance, locomotion, flight, manipulation, projection, construction and non-verbal communication’. Movement quality develops as young children embed elements of their movement vocabulary to movement memory, and integrate movement capacities such as balance and co-ordination precision and fluency (Maude,

2010). This process depends on maturation and experience, and if children do not have ample early movement experiences in a range of environments then most recent research suggests development may be delayed (Goddard-Blythe, 2013).

The implications of this are far-reaching, with motor proficiency linked to physical activity and poor motor proficiency resulting in sedentary behaviours and the avoidance of physical activity (Wrotniak *et al.* 2006). This has also been highlighted by Seedfelt (1980) and Clarke and Metcalf (2002) who suggest that a lack of proficiency in motor development acts as a barrier to later participation in physical activity, an important issue in light of the definition of physical literacy that identifies 'to value and take responsibility for engagement in physical activities for life.' (Whitehead, 2014: IPLA). This engagement in physical activity is widely recognised as an important factor in long-term health with the World Health Organization (WHO, 2011:1) recommending that 'Children and youths aged 5-17 should accumulate at least 60 minutes of moderate - to vigorous-intensity physical activity daily.' In light of this, much research focuses on the levels of moderate- to vigorous-intensity physical activity (MVPA) (Trost *et al.*, 2001; 2002; 2003; Page *et al.*, 2005), however Pate *et al.* (2008:178) highlight how this focus on MVPA has meant that little is known about the potential health benefits of lower intensity activity that results in less sedentary behaviours and suggests that 'future studies should measure sedentary and light activity to determine their independent and joint contributions to health outcomes.' This has particular relevance to this study as the play-based nature of the Foundation Phase encourages pupils to be moving throughout their learning, but this may not equate to a level that could be identified as MVPA.

Goodway *et al.* (2013:122) highlight the relationship between development of motor competence in the early years and lifelong physical activity behaviours, suggesting that 'children who are more highly skilled and motor competent will self-select higher levels of physical activity.' As Stodden *et al.* (2008) explain children in their early years learn to develop a group of skills known as Fundamental Motor Skills (FMS). As children develop different aspects of FMS 'they explore the potential of their bodies as they move through space (locomotion) and have increased stability and have increasing control over objects (manipulation)' (Gallahue *et al.*, 2012:186). Gallahue *et al.* concur with Seedfelt (1980) Clark and Metcalf (2002) and Stodden *et al.*, (2008) in suggesting that 'the development of FMS is essential to achieving proficiency in various sports, games, and dances of a culture' (2012:187). Previous research studies found that disadvantaged children demonstrated developmental delays in FMS (Connor-Kuntz and Dummer, 1996; Goodway and Rudisill, 1997; Hamilton, Goodway and Haubenstricker, 1999). Goodway and Rudisill (1997) and Hamilton *et al.* (1999) suggested that these delays indicated a lack of environmental support in which the children were raised. In light of this existing research Goodway and Branta (2003:37) highlight the need to 'examine the role of intervention programs in remediating developmental delays with this disadvantaged population, specifically in the motor development area.' Although the Foundation Phase is not being implemented as an intervention, in this research is it being studied as a naturalistic intervention. Given the emphasis by the Welsh Government on the need to close the gap in terms of pupils in areas of socioeconomic deprivation (DCELLS, 2008a), then the impact of the Foundation Phase on children's FMS is particularly relevant.

Haywood and Getchell (2005) identify two components of FMS; locomotor skills, such as running, skipping, hopping, galloping, sliding and leaping and object control skills, such as throwing, catching, striking, bouncing, rolling and kicking.

A common misconception is that FMS will develop naturally, however play in itself is not enough for the development of these skills, teachers and coaches need to have the necessary understanding of motor development to identify the appropriate task and environmental conditions to support the development of children's motor competence (Gallahue *et al.*, 2012; Maude, 2010). Important to note here is that although Gallahue *et al.*, (2012:186) identify early childhood as a time primarily concerned with the acquisition of FMS, they do not advocate children focusing on a high level of skill in a limited number of movements, rather that 'the focus should be on developing basic motor competence and efficient body mechanics in a wide variety of movement skills and situations' and they further highlight that the role of teachers and coaches is to help 'children in developing an array of movement patterns' (p.191). This broad array of movement experiences is important if young people are to have the necessary skills in a range of activities that will enable later choice of physical activity and progress in the physical literacy journey.

Developmentalists such as Newell (1984) Caldwell and Clark (1990) and Haywood and Getchell (2009) suggest that motor skills are developed through the interaction of constraints from the 'specific demands of the movement task' with the individual and the environment (Gallahue *et al.*, 2012:29). Maynard *et al.* (2013:214) support this when emphasising that development is not something internal belonging to the child but rather an 'interaction between the child and his or her social and cultural context'. Development takes place through a child's participation in the activities of their cultural community (Anning *et al.*, 2009; Rogoff, 2003). This view of development as interaction with the wider environment resonates with the philosophical underpinnings of physical literacy, that is the 'existentialist belief that individuals create themselves as they live in and interact with the world' (Whitehead, 2010:23). This view of development is identified in Dynamic Systems Theory where an

individual's development is dependent on their interaction with the environment as Goodway and Branta explain:

In this Dynamic Systems Theory (DST) perspective, factors (subsystems) within the organism (the learner) will influence motor skill development. For example, motivation, strength, and neurological development, are a few of these many factors. In addition, environmental considerations, such as the equipment used, previous experience, and instruction, may influence motor development (Goodway and Branta, 2003: 36).

This theory acknowledges that mastery of skills is non-linear and not necessarily smooth and hierarchical (Gallahue *et al.*, 2012). Children may respond to one task with a movement that demonstrates mastery in one environment, but with a less mature action in another depending on the demands of the task. Although many theoretical models of motor development rely heavily on movement, play and physical activity for their development, the 'nonlinear and discontinuous' (Gallahue *et al.*, 2012:28) process acknowledged in DST is most representative of the Foundation Phase curriculum. The balance of teacher-led and child-initiated learning and the emphasis on the importance of the environment in the Foundation Phase, means there are ever changing interactions of the environment, task and developing child and although developments may not be linear and hierarchical, children will have the individualised experiences necessary for the acquisition of motor skills at their own pace. The expertise of the teacher in relation to children's physical development is an important factor particularly in light of the concerns raised about low levels of teacher confidence in non-specialists in the primary sector (De Corby *et al.*, 2005; Griggs, 2012; Morgan and Burke, 2005). In order to ensure that teachers are able to provide tasks and an environment that are

appropriate for the pupils in their class, they need to have understanding of how children develop motor skills. With limited initial training in non-core subjects such as Physical Education (Griggs, 2012) effective strategies for supporting work based learning in the context of the school are crucial if teachers are to develop their confidence and enact a play based curriculum with appropriate physical development opportunities for pupils (MacPhail and Tannehill, 2012).

The opportunities for a variety of interactions with the environment are of particular importance for the development of fine motor skills. A range of movement experiences are important to ensure that children develop a 'solid base of good motor and sensory foundation skills' that are necessary for the good muscle strength and joint stability in hands and arms required for fine motor control (Kirby and Drew, 2003:37). Maude (2010:105) advocates the need for 'sufficient and extensive' gross motor experiences in order to develop co-ordinated manipulation and other fine motor skills. This is of particular relevance to the Foundation Phase as pupils will need to master handwriting, cutting and a range of fine motor activities that are required throughout the curriculum (DCELLS, 2008a).

2.2.2 Perceived physical competence

Almond (2013:83) supports the notion of a wide variety of experiences and cautions against a skill focus that makes a strong association of physical literacy with FMS, highlighting that the crucial feature of Whitehead's definition of physical literacy is 'the notion that motivation and confidence are central to making a commitment and maintaining an interest in purposeful physical pursuits'. He contests that in pursuing a skill-focused approach, then children who lack confidence or are shy or cautious will find this approach intimidating, off putting and possibly having a negative effect on their self-perception (Almond, 2013). The links between self-perception are increasingly being

explored in relation to lifelong physical activity and Stodden *et al.* (2008) highlight the importance of self-perception, emphasising that it is through an understanding of their own physical competence, that a child develops a level of perceived physical competence (Harter, 1999). Perceived physical competence has long been associated with the motivation to engage in physical activity, both in structured physical activity and also in broader recreation (Brustad, 1993; Deci and Ryan, 1985; Duda, 1995; Luke and Sinclair, 1991; Nicholls, 1984; Williams and Gill, 1995). Studies have shown the relationship between physical activity and perceived physical competence can be two way, with physical activity having a positive influence on perceived physical competence and likewise perceived physical competence having a positive influence on physical activity (Bois *et al.* 2005; Corroll and Loumidis, 2001; Planinsec and Fosnatic, 2005). The development of perceived competence is therefore important in the development of physical literacy in relation to motivation to engage in purposeful physical pursuits (Whitehead, 2014). The development of self-perception is multidimensional, where 'the self is best seen as a dynamic system constantly reacting and adjusting to life experiences' (Fox, 2010:73). Therefore a child's perception of his or her motor competence is a developmental phenomenon that changes across developmental time (Harter, 1999). It takes time for 'the complexity of the self-system to develop' (Fox, 2010:74) and young children are usually inaccurate in their perception of their motor competence (Harter, 1999). In particular, under the age of seven, children do not distinguish accurately between effort and mastery of a skill, perceiving higher levels of effort or more attempts at mastery to equate to greater skill competence (Goodway and Rudisill, 1997; Harter, 1999; Harter and Pike, 1984; Nicholls, 1978; Stodden *et al.*, 2008). Fox (2010:74) suggests this is due to limited experience 'to judge their levels of ability or their characteristics in relation to others'. The result being that a child may perceive themselves to be highly skilled because they have tried hard and persisted at a task, even though they

may have low levels of actual motor competence. Harter (1999:45) highlights the work of Suls and Sanders (1982) who found that younger children 'first focus on temporal comparisons (how I am performing now compared to when I was younger) and age norms rather than rather than individual difference comparisons with age-mates.' In light of this Stodden *et al.* (2008:295) suggest that; 'perceived motor skill competence will not be strongly correlated to actual levels of motor skill competence nor physical activity during early childhood.' Stodden *et al.* (2008) also suggest that low levels of perceived competence are related to lower levels of motivation to engage in physical activity. Fox (2010:76) highlights that 'physical self-perceptions closely predict the amount and type of involvement in physical activity and sport.' Therefore inaccuracy in judgments about perceived competence at an early age may actually be beneficial in maintaining pupil motivation to engage in physical activity. The children in the Foundation Phase in this study are under the age of seven, and as such would not be expected to have an accurate perception of the own physical competence. Indeed it could be said that the absence of Physical Education as a curriculum subject within the Foundation Phase would imply that these children would be particularly unaware of their own levels of physical competence.

2.3 Motivation, play and open curricula

This third section will explore aspects of the literature on motivation, play and open curricula. It builds upon the two previous sections on curriculum change and implementation and child development and motor development in discussing the literature around children's engagement in learning and how that relates in particular to the notion of playful pedagogy.

2.3.1 Motivation

'Human development is a cultural process,' (Rogoff, 2003:3) with humans developing through participation in sociocultural activities, and as such

individuals judge their self-worth against attributes and competencies that are highly valued in society (Fox, 2010). As children develop and learn to make more accurate judgments about their levels of competence, they do so in relation to the competence of those around them and in relation to perceived importance (Fox, 2010). With the 'physical self being likened to the public self' (Fox, 2010:75) an individual's perception of their physical self is strongly linked to the development of self-worth and self-esteem (Harter, 1999) and if physical attributes are highly valued in society and perceived as important the impact on global self-worth will be even greater (Fox, 2010; Harter 1999). Developing competence is therefore important in relation to self-worth, but also the way in which children are encouraged to develop their levels of competence is critical in establishing whether behaviours are integrated and internalised and thus self-determined, resulting in long-term motivation (Ryan and Deci, 2000b; Deci *et al.*, 1994; Deci *et al.*, 1991). Ryan and Deci state that:

To be motivated means to be moved to do something. A person who feels no impetus or inspiration to act is thus characterised as unmotivated, whereas someone who is energised or activated toward an end is considered motivated (Ryan and Deci, 2000a:54)

Ryan and Deci (2000a:54) point out that motivation can be in many forms, both in the level of motivation and also the 'orientation' that is 'the underlying attitudes and goals that give rise to the motivation.' Deci and Ryan's (1985) Self Determination Theory (SDT) 'is a macro-theory of human motivation, emotion, and development that takes interest in factors that either facilitate or forestall the assimilative and growth-oriented processes in people' (Niemic and Ryan, 2009:134). It distinguishes between different types of motivation based on the reasons that give rise to the action, 'the most basic distinction is between intrinsic motivation' where something is done because 'it is inherently

interesting' and 'extrinsic motivation', where something is done for a separate outcome (Ryan and Deci, 2000:55). Hastie *et al.* (2013:38) highlight how SDT as a multidimensional construct identifies motivation as 'a continuum characterised by amotivation (i.e. lacking any intention to engage in a behaviour), extrinsic motivation (where the behaviour is engaged in to achieve outcomes that are separable from the behaviour) and intrinsic motivation (i.e. where the behaviour is engaged in for the enjoyment and satisfaction inherent in taking part).'

In humans, intrinsic motivation is highly important. From birth humans are active, inquisitive, curious and playful, displaying a pervasive readiness to explore and learn and they do not need any external incentives to do so (Niemic and Ryan, 2009; Ryan and Deci, 2000). Indeed Ryan and Deci (2006: 56) suggest that 'this natural motivational tendency is a critical element in cognitive, social, and physical development because it is through acting on one's inherent interests that one grows in knowledge and skills.' When people are intrinsically motivated they carry out actions for fun, enjoyment and challenge (Niemic and Ryan, 2009; Ryan and Deci, 2000). 'SDT posits that intrinsic motivation is sustained by satisfaction of the basic psychological needs for autonomy and competence' (Niemic and Ryan, 2009:135), and in the absence of autonomy intrinsic motivation will not be sustained by competence alone, highlighting the importance of autonomy in motivation. The context is an important factor in determining motivation and in order for motivation, development and performance to be maximised, the social context needs to satisfy the 'basic psychological needs for competence, relatedness, and autonomy' (Deci *et al.*, 1991:327). Central to SDT is that these social contexts will promote 'intentional action' and that support for autonomy will facilitate 'actions being self-determined (rather than controlled)' (Deci *et al.*, 1991:333).

Autonomous and intrinsic motivation is of particular relevance to this study as studies of classroom learning have shown the significance of autonomy as opposed to control in maintaining intrinsic motivation. Autonomy supportive teachers induce greater intrinsic motivation, curiosity and a desire for challenge, whilst students who are overly controlled lose initiative and learn less well (Benware and Deci, 1984; Ryan and Deci, 2000; Ryan and Grolnick, 1986). Deci *et al.* (1991:332) highlight the 'significant positive correlations between intrinsic motivation and achievement', Gillet *et al.* (2012:77) also identified links to 'conceptual learning, performance and school enjoyment' whilst Deci, Schwartz, Sheinman, and Ryan (1981) identified a positive link between student's intrinsic motivation and self-esteem. All of these studies show the importance of motivation in the school context and highlight the relevance of motivation to this study of the Foundation Phase and its impact on physical literacy.

Hastie *et al.* (2013) also link Achievement Goal Theory (AGT) to motivation, where success is viewed in terms of task orientation and thus self-improvement, as opposed to comparison to others (Nicholls, 1989). Studies have shown that a task-orientated goal perspective is linked to enjoyment and intrinsic motivation, and thus linked to engagement in physical activity and continued participation in sport (Dempsey *et al.*, 1993; Duda and Nicholls, 1992; Fox *et al.*, 1994; Kimiecik *et al.*, 1996). Hastie *et al.* (2013:51) highlight how both SDT and AGT 'use the notion of 'climates' to explain how people perceive the environmental structure of a setting. In SDT the climate is one that supports autonomous learning to foster motivation, and in AGT climates increase intrinsic motivation by encouraging task/mastery orientations which 'relates students' performance to their effort, persistence and personal improvement' (Hastie *et al.*, 2013:51). Hastie *et al.* (2013:51), advocate that all 'students need to be afforded opportunities for voice and choice within lessons,' an interesting point when

considering the balance in the Foundation Phase between adult-led and child-initiated learning. This is also of particular relevance when considering the development of pupils' perceived physical competence, which is related to engagement in physical activity. Research findings indicate that significantly higher levels of perceived physical competence are developed when a mastery motivational climate is used for motor skill instruction as opposed to a low autonomy climate (Logan *et al.*, 2013; Robinson *et al.*, 2009; Robinson, 2011).

Reeve (2006:225) highlights that, 'classroom conditions can support or frustrate' inner motivational resources. Therefore the climate of the classroom and teachers' behaviours are highly significant in determining the level of self-determination and intrinsic motivation of the pupils. The context needs to support competence and relatedness to facilitate motivation, but most important is the level of autonomy supportive, rather than controlling behaviours (Deci *et al.*, 1991). SDT identifies teachers' motivating style on a continuum from highly controlling through to highly autonomy supportive (Reeve and Jang, 2006). Reeve and Jang (2006:210) identify autonomy support as 'the interpersonal behaviour one person provides to involve and nurture another person's internally-locussed, volitional intentions to act, such as when a teacher supports a student's psychological needs (e.g., autonomy, competence, relatedness), interests, preferences, and values'. Recognition of what pupils want to do and how they want to organise and contribute to their own learning acknowledges their psychological needs and as such contributes to an autonomy supportive climate. Motivation is strongly related to engagement as Reeve *et al.* (2004:147) explain when they describe engagement as 'the behavioural intensity and emotional quality of a person's active involvement during a task' highlighting its 'many interrelated expressions of motivation, such as intrinsically motivated behaviour, self-determined extrinsic motivation, work orientation and mastery motivation. The concept of engagement is important to

this study as Reeve *et al.*, (2004) highlight it is considered to represent a behavioural pathway of motivational processes that contribute to students' subsequent learning and development and as such predicts underlying motivation, an attribute of physical literacy.

Engagement is described as the level of participation and intrinsic motivation that a pupil shows in their task, and is a combination of behaviours such as persistence, effort and attention and attitudes such as motivation, interest, enthusiasm, positive learning values and pride in success (Akey, 2006; Newmann, 1992). Newmann (1992:3) highlights that 'engaged students make a psychological investment in their learning.' Akey (2006:22) found that 'students who reported experiencing higher levels of support from their teachers and greater understanding of the conduct expected of them also reported higher levels of engagement in school' therefore highlighting the important role of the teacher in fostering pupils' engagement in their learning. Supporting this Reeve (2006:225) claims that 'students' classroom engagement depends in part on the supportive quality of the classroom climate in which they learn' and that 'teachers most engage students when they offer high levels of both autonomy support and structure.' This is of particular interest to this study as the Foundation Phase with its combination of a balance between adult-led and child-initiated learning should, according to Reeve (2006), result in high levels of student engagement.

Csikszentmihalyi's concept of 'flow' (1979, 1989) has often been linked to engagement in a task (Harmer and Cates, 2004; Laevers, 1994). The concept of 'flow' develops an understanding of 'experiences during which individuals are fully involved in the present moment' (Nakamura and Csikszentmihalyi, 2002:89). Nakamura and Csikszentmihalyi (2002:90) explain how individuals in a state of flow describe how 'an experience seamlessly unfolds from minute to

minute' and identify characteristics of the state as 'intense and focused concentration on what one is doing in the present moment.' Akey (2006) suggests being in a state of flow suggests enjoyment of learning. Laevers (1994) in his theory of Experiential Education explains how deep immersion in learning has an affective component, and he recognises the combination of behavioural and affective components as involvement and well-being. Laevers (1997:2) suggests that involvement is seen as an indication for changes that are defined as 'deep level learning' (Laevers, 1997:2) and in order to gain an insight into high quality learning environments developed the Leuven Involvement and Well-Being Scale (Laevers, 1994). Subsequent studies have shown pupils' involvement is dependent on the 'interactions between the context (including the way teachers handle their group) and the characteristics of the children' (Laevers, 2000:25). Large studies of effective early learning with 60,000 pre-primary age children show that the more competent the teacher, the higher the level of involvement and well-being (Laevers, 2011; Laevers et al., 2005; Pascal and Bertram, 1995; Pascal *et al.*, 1998) implying teacher competence is synonymous with promoting autonomous behaviours and decision-making in children. Laevers (2000:25) however cautions that this state of involvement is not easily obtained as it 'only occurs in the small area in which the activity matches the capabilities of the person.' He suggests that 'young children usually find it in play' and it is in play that we see an 'exploratory attitude, defined by openness for, and alertness to, the wide variety of stimuli that form our surroundings'. This attitude enables a person to find 'the most intense forms of concentration and involvement' and it is this attitude underpinned by deep intrinsic motivation that keeps a person learning and developing (Laevers, 2000:25). The challenge for education is to keep this intrinsic source of motivation alive as a wealth of existing research shows that intrinsic motivation declines as children progress through the education system (Anderman and Maehr, 1994; Gottfried *et al.*, 2001; Lepper *et al.*, 2005; Nicholls, 1978; Sansone

and Morgan, 1992). To this end, play-based curricula such as the Foundation Phase would seem to have a greater potential to encourage, support and develop children's intrinsic motivation to study, learn and grow.

2.3.2 Play and playful pedagogies

The Welsh Government highlights the importance of play in the Foundation Phase as a way 'children become self-aware,' 'learn social rules' as well as being 'fundamental to intellectual development' (DCELLS, 2008a:6). However, although the links between play and high levels of involvement and intrinsic motivation have been well documented (Brock *et al.*, 2009; Brooker and Edwards, 2010; Howard *et al.*, 2002; Howard and McInnes, 2010, 2011; Moyles, 2010), what is not so clear is what constitutes play. Definitions are variously based on criteria, category or continuum (Pellegrini 1991; Piaget 1951; Rubin *et al.* 1983) and moreover definitions of play have tended to be adults' perceptions based on what they observe of children playing (Howard 2002). Feezell (2013:17) draws on definitions from Huizinga (1955), Suits (1988), Meier (1988), Ackerman (1999) and Brown (2009) in his exploration of approaches to play and concludes that 'play involves an attitudinal component,' with a key element of play being 'auto telicity, engaging in activities for their own sake or as ends in themselves'. Brown (2009:60) suggests that due to this attitudinal component of play the context or situation and the emotions of the player are all important in defining whether an activity is play or not, giving the example that 'sometimes running is play, and sometimes it is not. Play is a state of mind rather than an activity'. Huizinga (1955:3) also highlights this attitudinal element of play by stating that 'play is for fun', and that 'its motivation is for itself', suggesting that children do not play because of any reason more valuable than the play itself.

Singer (2013) claims that play can also be serious, it has patterns, rituals and is all-absorbing and that it is a sense of freedom to change reality that makes play so exciting. Vygotsky (1967) argued play's importance in creating its own zone of proximal development and from the time of early educational pioneers and theorists such as Rousseau, Dewey, Froebel, Montessori, MacMillan and Steiner, play has been recognised as having an important role in children's early education. However, Wood and Attfield (2005:1) point out that this is problematic in relation to four key areas; 'defining play, exploring the status of play, the play/work divide, and lifelong playing and learning'. Despite these challenges Chazan identifies the value of play in developing self-awareness and claims that:

Play activity reflects the very existence of the self, that part of the organism that exists both independently and interdependently, that can reflect upon itself and be aware of its own existence. In being playful the child attains a degree of autonomy sustained by representations of his inner and outer worlds.

(Chazan, 2002:198)

This development of self-awareness is an important aspect of child development that both contributes to physical literacy, and is an outcome of physical literacy. Maude (2010:111) highlights the important relationship between play and physical literacy, as she explains that play 'facilitates the establishment of many of the other attributes that are characteristic of a physically literate individual, including motivation, confidence, environmental and interpersonal engagement, self-knowledge and self-expression.' With these links between play and the attributes of physical literacy highlighted by Maude (2010), this study seeks to explore the impact of the Foundation Phase as a play-based curriculum on the development of pupil's physical literacy.

As a play-based curriculum the interpretation of play in the Foundation Phase is not clearly defined and, as highlighted previously, defining play is far from simple. Meckley (2002, cited in Wood and Attfield, 2005:4) identifies seven characteristics of play, suggesting 'play is child-chosen, play is child invented, play is pretend but done as if the activity were real, play focuses on the doing (process not product), play is done by the players (children) not the adults (teachers or parents), play requires active involvement and play is fun'. Sutton-Smith (1997) highlights the diverse types of play as well as the darker side of play and emphasises the many players that contribute to the ambiguity of play. With this in mind it is not surprising that Wood and Attfield (2005:5) maintain that defining play remains problematic as 'play is always context dependent' and that play itself can be in many different forms such as role play, imaginative play, free flow or structured to name but a few. Pellegrini's definition uses criteria to categorise children's behaviour and his comments are perhaps the most useful in relation to this study as he states:

Play can be categorised as 'more or less play', not dichotomous as 'play or not play'. Behaviours meeting all criteria might be categorised as 'pure play', whereas behaviours with fewer components are 'less purely play'. Simply put, acts should not be categorised as 'play' or 'not play': they should be related along a continuum from 'pure play' to 'non play'.

(Pellegrini, 1991:215)

The notion of a continuum of play works well for the Foundation Phase where children move from adult-led activities to more freely chosen tasks. Even many of the teacher-led tasks are playful in their nature. Wood and Attfield (2005:6) also illustrate the importance of Pellegrini's categories when they explain that

'children step in and out of play' and that 'practitioners often adopt playful orientations to teaching and learning.' This fluid nature of play as illustrated by Pellegrini's continuum highlights the incongruousness of identifying an activity as play or not. Howard *et al.*, (2002:3) suggest that 'if a distinction were drawn between play and playfulness, then this dichotomy would be less visible as feelings of playfulness could permeate both play and work.' This is particularly relevant to a play-based curriculum such as the Foundation Phase, as it could be argued that any play that takes place in the school setting cannot be 'pure play' but would be on a continuum of play and playfulness (Howard *et al.*, 2002; Pellegrini, 1991).

As well as the problems of defining play, Grieshaber and McArdle(2010) suggest that much that is assumed and written about the nature of play is not as claimed. They argue that 'play in the early years is not always innocent and fun; that it is also political and involves morals and ethics. Further, there are other sides to play that are not so romantic, natural or particularly educative, and play is not always the best way for young people to learn' (Grieshaber and McArdle, 2010:1). They highlight the work of Rousseau as influential in creating a myth about play being natural stemming from his work *Emile*, but that in fact this was a work of fiction and therefore they contend that much of early childhood theory is based on fiction (Grieshaber and McArdle, 2010). It is the language that has become established relating to play that leads to assumptions made about its nature. Sutton-Smith (1997) questions the rhetoric surrounding play as a discourse of play as fun that fails to acknowledge any play that is not fun, or dark play, highlighting that there is little or no mention of children for whom play is not fun, or happy. The notion that play reproduces experiences from real life surely means that some children must be experiencing rejection, discomfort and alienation (Sutton-Smith, 1997). The importance and benefits of play are so widely unquestioned and accepted that play even appears in article 31 of the

United Nations where it 'recognises the right of the child to rest and leisure, to engage in play and recreational activities appropriate to the age of the child' (UN, 1989: article 31). Burr (2002) points out, however, that this takes no account of children's vastly different economic, cultural and political circumstances around the globe. In so doing, it assumes a shared western vision of the notion of childhood which, as Postman (1994) points out, was not evident in western culture until the invention of the printing press in the middle of the fifteenth century brought about the need to learn to read. It was then that European civilization reinvented schools, resulting in the concept of childhood (Postman, 1994). With this notion of childhood emerged those who studied it as a concept, with some of the earliest writings by Rousseau influencing the likes of Froebel, Pestalozzi, Montessori and Piaget. However, many cultures do not separate children from adult communities, resulting in a notion of childhood and play that is very different in different societies (Rogoff, 2003).

Despite the struggle to define and categorise play (Wood and Attfield, 2005:7) governments and policymakers continue to recognise the value of play with early years curricula in Scotland and England emphasising the value of play for children up to the age of five (Moyles, 2010). However in Wales this recognition has been extended for older pupils up to the age of seven. This is of particular relevance to this study with the Foundation Phase for children aged three to seven years advocating that children 'learn through first-hand experiential activities with the serious business of play providing the vehicle' (DCELLS, 2008a:4). With such an emphasis on play in the Welsh curriculum, an understanding of the concept of play is central to how it is interpreted in the school context. Teachers' pedagogical foundations are reflected in the value they place on play and thus the opportunities they provide for the pupils to play (Sandberg and Heden, 2010:1). Therefore understanding teachers' perceptions of play is of particular importance for this research.

Sandberg and Heden (2010) found that teachers interpreted play in four main areas, 'learning, development, teaching and socialisation'. Previous research has shown that teachers have historically been advised not to interfere in children's play and are not comfortable with child-led activities and allowing children choice (Bennett *et al.*, 1997; Pascal, 1990; Sylva *et al.*, 1980; Wood *et al.*, 1980). Siraj-Blatchford and Manni (2008) caution that pedagogic interactions with children are varied, with adults tending to use closed questions and statements. This is a concern in terms of children's progress, as Montie *et al.* (2006:313) found that curricula using active, child-initiated learning and play in small groups resulted in improved language development and cognitive development of pupils at age seven. Teachers in the study by Sandberg and Heden (2010) expressed their belief that 'what children can learn through play often centres on social interaction and cooperation and how one acts'. Zimmerman and Morgan (2011) also highlight the unique social dimension to play stating:

When we start playing it can happen that we get involved in such a way that we forget everything else. We play the game for its own sake and for no other reason than to play. However, what makes this autonomous character possible is the meeting of the players and the relationships that follow

(Zimmerman and Morgan, 2011:49)

Here it is clear that Zimmerman and Morgan see play as a vehicle for interaction with others and the building and consolidating of social relationships. Suomi and Harlow (1971:493) further support the social aspect of play, highlighting that 'play is of utmost importance for the subsequent social well-being of the individual and those around him.' In relation to physical literacy Whitehead

(2010) highlights how social interaction with others builds our understanding of how they are feeling through the mirror neuron system. She further explains that these insights into neuroscience are 'particularly pertinent to physical literacy in that they propose that effective social interaction is significantly affected by the embodied dimension' (Whitehead, 2010:62). This would suggest that the development of physical literacy and play may be mutually beneficial.

The power of play in socialisation is increasingly acknowledged, even for pupils with autism where 'social dysfunction is the single most defining and most handicapping feature' (Rogers, 2000:399). Rogers (2000:399) further highlights that many current approaches and interventions for supporting pupils with autism are 'built upon careful prompting and shaping of child behaviours by typical peers embedded in child-initiated interactions within natural contexts.' The Foundation Phase could provide such a context and in so doing be an environment where children support each other in their learning and socialisation. Children have the opportunities to be deeply involved in their play and experience a state of flow and higher levels of motivation through peak experience (Csikszentmihalyi, 1979, 1989; Leavers, 1994; Maslow, 1987). As such Broadhead (2006:191) argues that children's play is 'their self-actualisation, a holistic exploration of who and what they are and know and of who and what they might become'. The value of a teaching and learning environment that allows children to play and learn together in creative investigative ways has long been acknowledged in early years literature (Broadhead, 2006; Gura, 1992; Isaacs, 1968; Moyles, 1989; Tyrell 2002) and classrooms that emphasise social competences through play are recognised as supporting physical, intellectual, social and emotional development (Broadhead, 2006; Goddard-Blythe, 2005; Maude, 2010; Pellegrini and Goldsmith, 2003; Robinson *et al.*, 2003). The holistic nature of this development resonates with

the monist philosophy of physical literacy and as such highlights the strong relationship between play-based learning and physical literacy.

Broadhead (2006:197) in developing the Social Play Continuum argues for the use of 'divergent assessment that sees the child within the context of their own possibilities rather than their capacity to achieve predetermined targets'. The Social Play Continuum supports this divergent model of assessment and allows teachers to assess the pupils' progression from sociability to cooperation. This is increasingly important in today's diverse and complex society, where there is a greater need to effectively manage interactions with others, and imaginative play may diminish aggression and develop emotional intelligence (Holland, 2003; Sawyer *et al.*, 1997). Developing this, Broadhead (2006:2) suggests that the more cooperative children's play is, the more they are likely to connect with other children and understand their knowledge along with a 'deeply fulfilling emotional engagement with the world around them.' These 'sociable and cooperative endeavours expose children to other children's perspectives and they become experts for one another, scaffolding their own and peers' learning experiences' (Broadhead, 2006:202).

When discussing the nature of play, Wood and Attfield (2005) warn of 'the danger of overlooking the fact that children have their own definitions of play'. This is highlighted in the work of McInnes *et al.* (2011) who studied children's approaches to activities and proposed that children make their own distinctions between work and play. It is also useful to consider the internally driven affective quality of play that has such an important role in motivation and engagement (Moyles, 1989). Although Feezell (2013) and Dewey (1933) both acknowledged an attitudinal component in play, Dewey (1933:210) made a distinction between playfulness and play where 'the former is an attitude of mind; the latter is an outward manifestation of this attitude'. Howard and

McInnes (2010:34) highlight that playfulness implies freedom and flexibility and suggest that 'viewing playfulness, as an attitude of mind, rather than play, the outward act, may be the most helpful way yet of thinking about this elusive concept and of providing a theoretical basis for implanting a play-based curriculum' such as the Foundation Phase. They further propose that utilising a concept of play which is based on children's perceptions highlighting playfulness as an approach and attitude to an activity may help to develop practitioners understanding of play (Howard and McInnes, 2010).

Howard and McInnes's(2010:35) work highlights how children make the distinction between work and play with clear cues illustrated 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 |
| Easy | No adult evaluation | Hard | Includes adult evaluation |
| | Can be continued-focus on the process | | Has to finish-focus on the product |
| Fun | Physical | Can be fun | Not physical |

This distinction that children make between play and work is of particular importance as 'children who practice a task under playful practice conditions (on the floor, adult nearby, choice) show superior performance and behaviours conducive to learning compared with children in a formal practice condition (at a table, adult present, no choice)' (McInnes *et al.*, 2009:124). McInnes *et al.* (2009:122) propose from their research that it is not whether the activity is play or not that is the issue, but rather 'the playful approach and attitude that is taken to an activity'. This is highly relevant to the Foundation Phase, as teachers need to ensure pupils are learning in a structured environment and this will inevitably reduce the opportunities for 'pure play' as described in Pellegrini's (1991) continuum. Although the experiences in the Foundation Phase are in the main structured in the sense that they are conceived, designed and introduced by teachers, it is the ability of the children to make choices about how they engage with these experiences that allow them to conceive of their learning

experiences as playful. 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 choice and autonomy are cues, which children relate to play. As autonomy is strongly associated with intrinsic motivation this has clear implications for levels of motivation and engagement (Deci and Ryan, 2000; Niemiec and Ryan, 2009).

As shown in table one the cues children use are based on environmental factors such as location and the presence of an adult, and emotional factors such as choice of the activity. McInnes *et al.* (2011:123) suggest that it is the use of these cues that enables children to 'map activities on a play-work continuum'. McInnes *et al.* (2011) draw on Gibson's (1986) theory of affordances in their discussions relating to environmental cues whereas Fiskum and Jacobsen (2013:77) explains 'an affordance is an incentive to action'. Kyttä (2002) and Fjortoft (2001) in studying affordances in children's environments identify how the physical environment offers different modes of play, such as space and smooth surfaces afford running and cycling, and trees afford climbing and swinging, whilst shelters offer peace and quiet. The concept of affordances will be explored in more detail in later discussion relating to the outdoor environment, however affordances of the environment are of particular relevance as they suggest cues for children in relation to their activity. The environment can therefore be manipulated to form cues children use to define play and as such create playful conditions which 'impacts on performance, behaviour and learning' (McInnes *et al.*, 2009, cited in McInnes *et al.*, 2011:123; Radcliffe 2007; Thomas *et al.*, 2006). Papatheodorou (2010:145) argues that spaces 'shape and condition how we feel, think and behave,' therefore by manipulating these cues practitioners can work to co-construct a learning environment that 'reduces the cue distinctions, blurs the boundaries between play and not play and engenders playfulness' (Howard and McInnes, 2010:37).

Young children in action need spaces arranged and equipped to promote active learning and the Foundation Phase advocates a well-planned space to be a learning environment giving many opportunities for children to develop through both child-initiated and adult-led play activities (Hohmann and Weikart, 2002; DCELLS, 2008a). If, as evidence suggests, the organization of the whole school space, including the outdoor space as well as the classroom, the resources and the design of educational spaces, affect children's learning and how they perceive an activity, then the management of these spaces is crucial to allowing children autonomy in their learning and creating an ethos of playfulness (McInnes *et al.*, 2011; Papatheodorou and Ramasult, 1994; Penrose *et al.*, 2001).

2.3.3 Open curricula and the Foundation Phase

The approach of playfulness in children's early education is not new, and is evident in many curricula across the world such as *Te Whāriki* in New Zealand, High/Scope in the USA and *Reggio Emilia* in Italy. These are described as play-based or 'open' curricula, which Pramling *et al.* describe as curricula that provide:

Space for individual initiatives from both teachers and children, room for exploring, trying things out, for raising open questions to which there are no fixed and final answers. Opportunities to think and reflect, room for children's questions, exploring, creativity, fantasy and challenging for different learning styles and strategies. In this way each and every child can find a learning space and appropriate activities within a programme.

(Pramling *et al.* 2006:29)

Open curricula are holistic in their approach, demonstrating an 'awareness of

the 'whole' child or young person, rather than the child as the output of the formal curriculum' (Petrie, 2005:294). This awareness of the 'whole' child resonates with the monist philosophy of physical literacy, and likewise the Foundation Phase in Wales is an educational provision that is holistic, with the child at the heart of the curriculum; it requires a balance between child-initiated activities and those directed by practitioners (DCELLS, 2008a). This curriculum evolved from proposals set out in *The Learning Country* (ACCAC, 2001) document. It sets out to develop and strengthen principles and practice from the Desirable Outcomes for children's learning before compulsory school age (ACCAC, 2000) and linked these with programmes of study at Key Stage 1 to create a rich curriculum under seven areas of learning (DCELLS, 2008a). The core aims were further developed in *The Learning Country 2: Delivering The Promise*, which highlights their development from the United Nations Convention on the Rights of the Child emphasising childhood well-being. Underpinning the whole of the Welsh curriculum is a non-statutory skills framework, which is a key part of the revised, more learner-centred and skills-focused curriculum in Wales to provide continuity and progression in thinking, communication, ICT and numbers for learners from three to nineteen and beyond (DCELLS, 2008c). Skills for future employment were identified as poor in school leavers, with the *Future Skills Wales 2003 Generic Skills Survey* stating: 'Of the establishments reporting skills gaps in their workforce, IT skills are the most common skills lacking, followed by communication skills and then... showing initiative, problem solving and ability to learn' (Future Skills Wales 2003:18). In the publication, *Excellent Schools*, the schools inspectorate in Wales (ESTYN) had already recognised this situation and highlighted that schools would need to devote attention to developing attitudes to learning – affecting the disposition of learners and developing their learning skills – as well as to delivering formal instruction (ESTYN, 2002). The skills framework is not intended to be a curriculum framework. It underpins the Foundation Phase

framework, all the subjects of the national curriculum aiming to ensure a coherent approach to learning and to progression across all ages from three to nineteen years (DCELLS, 2008c:2). At the age of three to seven years the Foundation Phase framework identifies seven areas of learning, which should form part of a holistic, integrated and cross-curricular approach with an emphasis on the development of skills (DCELLS, 2008a:6). Personal and social development, well-being and cultural diversity are 'at the heart of the Foundation Phase' (DCELLS, 2008a:6) with the child 'at the centre of any planned curriculum' (DCELLS, 2008a:6; Maynard, 2007).

The New Zealand early childhood curriculum, known as *Te Whāriki* is a holistic approach that influenced the Welsh Foundation Phase. *Te Whāriki* translates to 'a woven mat' and integrates traditional culture, concepts and philosophies into a modern, bicultural educational document (Rameka, 2011). *Te Whāriki's* framework is woven from the curriculum principles of empowerment, holistic development, family and community and relationships, and the curriculum strands of well-being, belonging, contribution, communication and exploration (Peters, 2011). This resonates strongly with the Foundation Phase where holistic development and the well-being of the child form the 'heart' of the curriculum (DCELLS, 2008a:14; Waters and Maynard, 2010). *Te Whāriki* is underpinned by the notion that the Maori language and culture are to be protected. With the Welsh language generally agreed to be the oldest living language in Europe (Wyn Siencyn and Thomas, 2007), the Welsh Assembly Government believes it 'is an integral part of our national identity' and 'an essential and enduring component in the history, culture and social fabric of our nation' (Iaith Pawb, 2003). The Welsh Government is 'committed to developing and promoting the Welsh language' (DCELLS 2008a:12). In order to enact this policy statement 'all settings/schools will implement a Welsh Language educational programme in the Foundation Phase (DCELLS 2008a:12) with an

aim to 'create a truly bilingual Wales' (Iaith Pawb, 2003).

Te Whāriki and the Foundation Phase share similarities of bilingualism and a holistic, child-centred approach and are described as an 'Open Curriculum' along with High/Scope, and *Reggio Emilia* schools (Pramling *et al.*, 2004:29). The High/Scope approach was specifically designed to improve intellectual performance for children in disadvantaged areas in the United States (Brock *et al.*, 2009) and shows good preschool programmes for poor children have lasting effects (Schweinhart *et al.*, 2012). This resonates strongly with the Foundation Phase, as there is clear strategic direction that the education system in Wales is going to actively address concerns around underperformance linked to socioeconomic divisions (Davidson, 2010). High/Scope and the preschools of *Reggio Emilia* in Northern Italy also share an approach that sees children as active learners and participants in their own socialisation and knowledge building (Brock *et al.*, 2009; Epstein, 2013; Hohmann and Weikart, 2002; Rinaldi, 1998). Malaguzzi (1993:10) describes children as 'rich in potential, strong, powerful and competent'. Practitioners are seen as partners – co-researchers – in this learning. (Maynard *et al.*, 2011), their role includes the ability to 'set up situations, and make choices that facilitate the work of children' (Malaguzzi 1998:91).

Early educational theorists have also influenced the Foundation Phase philosophy. Froebel valued the development of the whole child through adventurous play outside and active learning (Bruce, 2012; DCELLS, 2008d; Tovey, 2012). In contrast Montessori felt that children needed to engage in real, rather than play, experiences (Bruce, 2012) with structured teaching methods enabling children to learn independently through increasingly complex tasks, an approach also advocated by the Foundation Phase (DCELLS, 2008d). Steiner (1988:81), in a complementary development, believed that 'the whole point of a

kindergarten class is to give young children the opportunity to imitate life in a simple, wholesome way' that is reflected in the Foundation Phase approach stressing the child's individuality, feelings and personal and social learning (DCELLS, 2008d). Steiner Waldorf schools emphasise activity and extend the play-based curriculum to the age of six (Taplin, 2011).

Macmillan's belief that outdoor play improves the health of children reflects the emphasis on outdoor learning in the Foundation Phase (DCELLS, 2008a; Lemon and Lime Education 2011). Isaacs also believed in the importance of play in children's learning as a means of expressing feelings, solving problems, gaining confidence and developing social relationships with other children. Piaget's constructivist theory believes that children are active participants in the construction of their knowledge. Although his ideas were highly influential in the 1960's there has been criticism of his emphasis on age-related stages of development (Brock *et al.*, 2009) and the Foundation Phase recognises this criticism emphasizing that children are on a learning continuum as a progressive framework which should be appropriate for their stage of learning rather than focusing solely on age-related outcomes (DCELLS, 2008a). Vygotsky and Bruner developed Piaget's constructivist ideas, to a social constructivist theory highlighting how children construct their learning through interaction with the learning environment, adults and peers. These theorists and international approaches have influenced the Foundation Phase and Table 2 summarises how aspects of the theories and approaches are relevant to the Foundation Phase curriculum.

Table 2: Educational influences on the Foundation Phase

| Educational Theorist / Approach. | Relevance to the Foundation Phase |
|----------------------------------|-----------------------------------|
|----------------------------------|-----------------------------------|

| Educational Theorist / Approach. | Relevance to the Foundation Phase |
|----------------------------------|--|
| Frederick Froebel (1782-1852) | <p>Teacher like a gardener; nurturing children’s growth. Holistic approach, strong connection between man and nature.</p> <p>Open spaces for outdoor play children learn about nature through outdoor play, gardening activities. Valued play and work with adults.</p> <p>Each child had an individual plot to cultivate in the garden.</p> |
| Maria Montessori (1870-1952) | <p>Child-sized materials.</p> <p>An outdoor garden as an area for ball games and tress for shade, open access from indoor to outdoor areas. Structured materials rather than a purely “natural” environment.</p> <p>Value on independent and concentrated work.</p> |
| Rudolf Steiner (1861-1925) | <p>Distinctive form of education stressing the child’s individuality, feelings and personal and social learning.</p> <p>Learning activities that are authentic and linked to day-to-day life modelled by the teacher.</p> <p>Daily routine includes stories, poems, singing, movement, outdoor games, and creative and imaginative play with natural materials and coloured fabrics.</p> |
| Margaret McMillan (1943-present) | <p>Outdoor play for improving child health.</p> <p>Use of a garden with apparatus for climbing and swinging.</p> <p>Animals and birds in the garden and children help grow community produce.</p> |
| Susan Issacs (1943 – present) | <p>Students have access to the wide range of experiences in order to satisfy curiosity and enquiry.</p> <p>Opportunity to work with natural resources and work in the garden.</p> |
| Jean Piaget (1896- 1980) | <p>Constructivist theory, recognizing children as active participants who construct learning through interaction with their environment and making</p> |

| Educational Theorist / Approach. | Relevance to the Foundation Phase |
|----------------------------------|---|
| | <p>connections between new experiences and previous learning.</p> <p>Children active not passive learners</p> |
| Lev Vygotsky (1896-1934) | <p>Play and speech development are important factors in the learning process. With communication and social interaction with adults or more knowledgeable peers, children can achieve higher levels of understanding than they would independently.</p> <p>The gap between what children can achieve unaided and what they can achieve with support and guidance called the 'Zone of Proximal Development'</p> <p>Practitioner has key role in matching learning activities to the child's level of development</p> |
| Jerome Bruner (1915 – present) | <p>Three broad modes of learning: enactive (actions), iconic (pictures) and symbolic (words and numbers). Adult intervention important to support or 'scaffold' learning and for progress.</p> <p>Introduced the idea of a 'spiral curriculum', wherein a topic can be re-introduced at a more complex level as thinking skills develop.</p> |
| <i>Te Whāriki</i> | <p>Integrates traditional culture, concepts and philosophies into a modern bicultural education. From the curriculum principles of empowerment, holistic development.</p> <p>Well-being, belonging, contribution, communication and exploration.</p> |
| <i>High Scope</i> | <p>To improve intellectual performance for children in disadvantaged areas.</p> <p>Active participatory learning.</p> <p>Emphasises interaction, reasoning, reflection and responsibility for self-learning.</p> |

| Educational Theorist / Approach. | Relevance to the Foundation Phase |
|----------------------------------|--|
| <i>Reggio Emilia</i> | Children as active learners and participants in their own socialisation and knowledge building. Children seen as rich in potential, strong, powerful and competent. Creativity at the core of its philosophy. Practitioners are seen as partners – co-researchers – in this learning process. |
| Scandinavia / forest school | Use of the outdoors as an integral part of children’s learning. Kindergartens spend more time outdoors. Spending all or most of the day in the natural environment. Children’s development and learning in kindergarten was strengthened as a consequence of the amount of time spent playing outdoors. |

Drawing on the beliefs of early educational theorists such as Froebel, and influenced by established international models and approaches to learning, the Foundation Phase promotes children’s ‘discovery and independence.’ Central to this process is the role and importance of the outdoor environment as a resource for children’s learning (DCELLS, 2008a:4).

2.4 The Outdoor environment

This final section examines the literature and existing research around the role of the environment in learning with a focus on the role of the outdoors.

Educational approaches in Scandinavia see the use of the outdoors as an integral part of children’s learning. Kindergartens spend more time outdoors, with some children aged three to six spending all or most of the day in the natural environment (Fjortoft and Sageie, 2000). 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 growing movement of Forest Schools, but also from the influence of educational theorist such as Froebel et al. as highlighted in the previous section. 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, physical activity, physical and mental health, and concentration (Bjørklid, 2005; Fjørtoft, 2001, 2004; Grahn *et al.*, 1997). Grahn *et al.* (1997) found that children's development and learning in kindergarten was strengthened as a consequence of the amount of time spent playing outdoors (Moser and Martinsen, 2010).

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.* (2013:212) 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 (Passy and Waite, 2011). However, there has been much concern expressed for the lack of outdoor play opportunities for young children as Palmer (2006:59) puts it 'the decline of the free-range child' and Wilson (2012) highlights the contrast between structured playing areas and 'free-range' playing in a wild overgrown space. In so doing, she touches on many of the complexities of outdoor play:

Here there were trees and berries and flowers and 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'. We really played here. I do not mean the formalised playground games that are often mistaken for a play experience, like the skipping rituals, balls against the wall, clapping games or French elastics. These were all structured activities, even if we chose them ourselves. They were formulaic, another test in a testing environment, a way for peers to ridicule or elevate each other in a blatant piece of socio-dramatic playing. The children would mimic the cruel graded precision of the school system and everything within it. It was torture to the Dyspraxic Wilson to whom these games were utterly unfathomable and just one big clumsy fumble. 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.

(Wilson, 2012:32)

Wilson (2012) captures so well the fears of Louv (2005:99), who has identified the psychological and emotional problems of children not playing in the natural environment in what he calls 'nature deficit disorder.' 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 space that Wilson describes has been left to grow wild and in so doing is full of variables, an important factor for creativity in what Nicholson (1971:6) 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.' Rasmussen and Smidt (2003) also recognise this inventiveness as they stress two important factors in relation to outdoor play, the challenge, excitement and risk factors and the opportunities for imagination provided by the limitless variables of the outdoor environment.

The concept of affordances has been widely used in the field of outdoor research (Fiskum and Jacobsen, 2013; Fjortoft, 2001, 2004; Kytta, 2002; Storli and Hagen, 2010;). Gibson (1986:127) states that 'the affordances of the environment are what it offers the animal'. He maintains that they are 'neither an objective property nor a subjective property; it is both' (Gibson, 1986:129). Affordances have properties that they offer to a species but the affordance not only depends on the environment but also the species. Gibson gives the example of water that affords a surface to walk upon for some species of bugs, but not for terrestrial animals and so 'an affordance points both ways, to the environment and to the observer' (p129) therefore affordances are variable and relational, as they emerge from the interaction between objects, organisms and the environment. The ontology of affordances opposes the dualist treatment of the individual and the environment, with Kytta (2002:46) 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.

Although Gibson's theory is widely recognised, it has been developed in different ways (Borghi *et al.*, 2012; Ellis and Tucker, 2000; Johnson Frey 2004). McGrenere and Ho (2000) highlight Norman's (1988) interpretation of affordances, which suggests that affordances depend not only on the capabilities of an animal in relation to an object, but also their previous experiences and knowledge and as such the perceived affordance, whilst Gibson's theory claims an affordance is binary, either there or not (McGrenere and Ho, 2000). Kytta (2004:109) develops this further suggesting that 'affordances can be regarded as a graded property rather than one which belongs to an either-or category' and she highlights different levels of affordances as: 'potential, perceived, utilised and shaped affordances.' Kytta's (2004) study of affordances of children's environments found that a rural natural environment provided a superior amount of affordances, something that Fjortoft and Sageie (2000) and Fjortoft (2000, 2001, 2004) have noted. Kytta (2004) suggests children's ability to perceive affordances develops as they grow and learn new physical skills. 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 (Stroli and Hagen, 2010). Fjortoft (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 (Fjortoft, 2000, 2004). The use of the outdoor environment as part of the Foundation Phase may therefore be an important factor in the development of physical competence, which is an attribute of physical literacy.

In an interesting study of children's enthusiasm for outdoor play, Stephenson (2002) has undertaken a multi-dimensional approach to a childcare centres. She

concluded that the outdoors was 'qualitatively different' and had 'fewer restrictions and controls and activities tended to be open-ended' highlighting the 'unpredictability', 'dynamic' and at times 'threatening' nature of the outdoors (Stephenson, 2002:37). All of these are cues that children link to play and risky play and may therefore account for their motivation to play outside. Fiskum and Jacobsen (2013) highlight recent developments in neuroscience that suggest visual information is not just processed by the visual cortex, but also simultaneously by the limbic system. The limbic system initiates action that is regulated from the cortex in the same way as we regulate emotion (Campos *et al.*, 2004). Fiskum and Jacobsen (2013:77) argue that this gives a new perspective on how we see affordances, and suggest that 'affordances in indoor and outdoor schooling have different requirements for cortical regulation.' Having to regulate and 'suppress tendency to actions given by affordances' when indoors which they identify as 'action regulation', as opposed to the freedom to respond in action outdoors may result in stress and different behaviours in children (Fiskum and Jacobsen, 2013:77). Fiskum and Jacobsen (2013) found the amount of stress in action regulation was predicted by gender, supporting the study by Gustafsson *et al.* (2012), which found that boys had a significantly higher outcome from outdoor education than girls. Studies such as this are significant for the Foundation Phase, which is underpinned by a philosophy of well-being and has the 'development of children's self-worth and self-esteem' at the core of the curriculum (DCELLS, 2008a:4). Nicklasson and Sandberg (2010) suggest 'nature is an environment where both children and adults can find peace and relaxation from the stresses of everyday life, and increase their playfulness and feelings of freedom'.

Fjortoft (2000) explored the learning effects from playing in a natural environment on motor development. Grahn *et al.*, (1997, cited in Fjortoft, 2000 and Mygind, 2007) found that children playing in an outdoor environment

which included natural environments had better physical fitness, motor skills and coordination, concentration abilities and less absence due to illness than children in an urban environment. Concerns have been raised about the levels of sedentary behaviour in young children, with Oliver *et al.* (2009) reviewing forty-nine studies and concluding that the majority of pupils spent their time in inactivity. Dowda *et al.* (2009) suggest the environment that children are in has an impact on activity levels, with schools whose environments promoted physical activity with more space, less fixed equipment and more portable equipment having children with significantly higher levels of physical activity than those that did not. Mygind (2007) found that the outdoors, in particular a Forest School environment had a significant impact on the levels of physical activity of children, and suggests that outdoor learning should be combined with indoor learning in order to impact on physical health. Other studies also highlight increased physical activity in outdoor play, although there was no significant difference between play in the natural landscape and play in the schoolyard (Storli and Hagen, 2010). Fjortoft and Sageie (2000) and Fjortoft (2001, 2004) also highlight the impact of the natural environment on motor fitness and coordination. Fjortoft (2001, 2004) suggests 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.

A growing body of literature supports the role of nature and the outdoors in promoting mental health and well-being (Berto, 2005; Bird, 2007; Korpela *et al.*, 2001; Korpela and Hartig, 1996; Munoz, 2009), prevention of depression (Douglas, 2005), and alleviation of symptoms of ADHD (Taylor *et al.*, 2001; Taylor and Kuo, 2001, 2009). In light of this, Nicklasson and Sandberg (2010) studied affordances in relation to a taxonomy (Kytta, 2003), which identifies perceived and utilised affordances and they also added the additional concept of

private and public affordances. They found that boys aged six and girls aged seven to nine used shelters, perceived as private spaces, the most and whilst affordance in a public space seems to be good enough, private space for individual activities were offered less (Nicklasson and Sandberg, 2010). Their study highlights the need for staff in schools and planners to develop an outdoor environment as both a private and public space with varied and challenging affordances. By creating successful outdoor play which 'offers flexible opportunities where children engage in imaginative and creative play, develop their communication skills and build relationships with other children and adults' Canning (2010:555). This is particularly relevant for this study as the Foundation Phase framework requires greater emphasis on the outdoor environment as a resource for children's learning with a specific requirement that practitioners allow time for, and find ways of supporting, 'child-initiated' learning in both indoor and outdoor environments (Maynard, Waters and Clement, 2011). Therefore this aspect of the Foundation Phase may contribute not only to the attribute of physical literacy of physical competence and interaction with the environment, but also to sense of self and self-confidence, self-expression and communication with others.

2.5 Conclusion

This chapter explored the existing research and literature in relation to the focus of this study. Due to the complex nature of this research, the literature was drawn from a range of fields and organised into four different and complementary sections. The first section focused on curriculum change, curriculum change in physical education, physical literacy; the second on child development and motor development; the third on motivation, play and playful pedagogies and the fourth on the role of the outdoors.

This review of literature from a range of fields demonstrates the link from existing knowledge to the generation of the research questions. Literature in the fields of curriculum change, curriculum change in physical education and physical literacy informed the development of research question one; *What are the main learning outcomes of the Foundation Phase in relation to physical literacy and how are teachers interpreting these learning outcomes?* The complex nature of the Foundation Phase required literature from a broad range of fields to be explored and raised questions about the possible learning and experiences of children experiencing this new curriculum. This informed research question 2: *To what extent are these outcomes being achieved?* and research question 3: *What processes might be impacting on the achievement of the main learning outcomes?* Literature drawn from the fields of child development and outdoor learning also raised questions about the wider learning opportunities of the Foundation Phase as a play-based curriculum which provides a precedent for asking research question 4: *How is pupils' wider learning developing in the Foundation Phase?*

This chapter demonstrated the multidisciplinary and complex nature of this study and in so doing highlighted the need for a complex multi-layered research design. The next chapter (Chapter 3) will draw from the fields of literature in this chapter and from the field of research methods to outline the methodology and research design for this study.

Chapter 3 - Methodology

The purpose of this chapter is to outline the methodology for the generation of data required to answer the research questions. Drawing on literature in the field of research methodology as well as literature from the range of disciplines highlighted in the previous chapter (Chapter 2), this chapter demonstrates how a complementary mixed-methods design was needed to answer the research questions in the complex context of the Foundation Phase. A pragmatic approach to the study using both quantitative and qualitative methods enabled a deeper understanding of the implementation of the new curriculum. This chapter outlines how the research design was implemented in three phases, with the various methods complementing and informing the process, some implemented consecutively and others concurrently in the process of data generation.

The research design used quantitative instruments, administered as repeated measures across three moments of time, to investigate the achievement of learning outcomes whilst qualitative methods explored the process of how these outcomes were being achieved and how children and teachers made meaning of the Foundation Phase curriculum. This research aligns to a social constructionist ontology and as such recognizes the role of the researcher in the co-construction of the data. As such, this chapter highlights the measures taken to ensure trustworthiness throughout this process.

The pragmatic use of a complementarity mixed-method design for this study locates this research in the field of mixed-methods research which, according to Johnston and Onwegbuzie (2004:14), is 'a research paradigm whose time has come'. As a study seeking to explore the implementation and pupils' experiences

of a new curriculum in two schools, such a complex and challenging phenomenon requires multiple tools (Cook, 1985; Mathison, 1988) and 'the inevitable organizational, political, and interpersonal challenges of program evaluation mandate the use of multiple tools from evaluators' full methodological repertoire' (Cook, 1985; Mathison, 1988; cited in Greene *et al.*, 1989:122). This study relates to the growing discourse advocating mixed-methods as a pragmatic approach to research amidst claims that 'epistemological purity does not get research done' (Gorard and Makopoulou, 2012; Green *et al.*, 1989: 125; Johnston and Onwegbuzie, 2004; Miles and Huberman, 1984).

The first section of this chapter outlines the research design and methods that were used in this study and examines the rationale for the research design and the choice of instruments. The second section of the chapter describes the context for the study, the nature of the participants and ethical considerations in relation to these as well as issues of legitimation, validity and trustworthiness. The third section of the chapter outlines the methods, identifying when and how they were used and considers the merits, limitations and ethical considerations of the different methods in relation to their application to the research process.

3.1 Rationale for a mixed-methods approach

The Foundation Phase as a 'naturalistic intervention' is multilayered and complex (Cohen *et al.*, 2008). Literature in the previous chapter (Chapter 2) highlighted complexity theory as a way for understanding curriculum change with the identification of three inter-linked dimensions (Ennis, 2013; Fullan, 1999; Jess *et al.*, 2011; Ovens *et al.*, 2013). These three dimensions of transphenomenal, transdisciplinary and interdiscursive recognize the need to study a phenomenon at different levels, across disciplines and the way that discourses overlap and intersect (Davis 2008; Davis and Phelps, 2005). In order

to study these dimensions and gain a deep understanding of the complexities of the curriculum this research required a mixed-methods pragmatist approach. This approach combined methods from quantitative and qualitative paradigms in a complementarity mixed-method design, which enabled the study to measure overlapping but also different facets of children's learning in the Foundation Phase and yield an enriched, elaborated understanding of the Foundation Phase as a naturalistic intervention (Greene *et al.*, 1989). Purists such as Guba and Lincoln (1988) and Smith and Heshusius (1986) argue that using mixed-method evaluation designs in which qualitative and quantitative methods are combined and implemented within different paradigms is neither possible nor sensible. Quantitative purists advocating a positivist philosophy suggest that social science inquiry should be objective and the researcher is separate from those in the study (Maxwell and Delany, 2004; Schrag, 1992). In the context of an educational setting Parlett and Hamilton (1972:9) argue that a positivist scientific experimental approach, which they describe as 'agricultural-botany paradigm' is not feasible, due to 'manifold extraneous influences.' Conversely qualitative purists advocate a constructivist view, which contends that multiple realities abound (Guba and Lincoln, 1989; Schwandt, 2000). However, a growing body of literature suggests that 'epistemological purity does not exist' and therefore paradigm attributes can be mixed and matched in conjunction with methods to achieve the combined approach appropriate for a given enquiry problem (Greene *et al.*, 1989:257; Miles and Huberman, 1984; Smith and Heshusius, 1986). Onwuegbuzie and Leech, (2005:377) even argue for the terms quantitative and qualitative to be replaced by 'confirmatory and exploratory research.' These are terms that encapsulate this study well, as the research sought to both confirm whether outcomes were being achieved and explore how. In so doing the study was not concerned with whether the Foundation Phase was the 'cause' of pupil progress, but rather explored pupils' progress and experience in the Foundation Phase.

Johnston and Onwuegbuzie (2004:14) present 'mixed-methods research as the third research paradigm in educational research' with Cohen *et al.* (2011) suggesting that pragmatism, a 'what works' to answer the research questions is the most useful approach, where the research is driven by the research questions and often, as in the case of this study, requires both quantitative and qualitative data to answer them (Greene *et al.*, 1989). This approach is supported by Gorard and Makopoulou (2012:106), who argue that mixed-methods is the natural approach when researchers 'use whatever methods they need to answer their research questions'. Morgan and Hansen (2008:58) also argue for a pragmatic approach to research where 'abductive reasoning moves back and forth between induction and deduction' from multiple methods. The use of mixed-methods in this research recognises that the researcher cannot stand apart from what is being studied, the multiple realities are socio-psychological constructions forming an interconnected whole and as such a mixed-methods approach is underpinned by a social constructionist ontology (Maykut and Morehouse, 1994).

A key feature of mixed-methods is its methodological pluralism which Johnston and Onwuegbuzie (2004:14) suggest 'frequently results in superior research'. As a naturalistic study, requiring the questions to be answered in situ, the use of qualitative methods in the research design portrayed the dynamics of classroom life as it naturally unfolded (Hastie and Siedentop, 1999). At the same time quantitative methods gave a measure of pupils' progress in repeated measures across a time frame. Morgan (2008) highlights this approach in the work of Creswell and Clark (2007) whose combination of methods used inductive results from a qualitative approach to inform deductive goals of a quantitative approach and vice versa. This approach to the research design reflects the views of Johnston and Onwuegbuzie (2004) who argue that the purists' focus on the

differences between paradigms is not helpful. They contend that epistemological and methodological pluralism should be promoted in educational research and their stance is particularly relevant to this study as they state:

Today's research world is becoming increasingly interdisciplinary, complex and dynamic; therefore, many researchers need to complement one method with another, and all researchers need a solid understanding of multiple methods used by other scholars to facilitate communication, to promote collaboration, and provide superior research. Taking a non-purist or compatibilist or mixed position allows researchers to mix and match design components that offer the best chance of answering their specific research questions.

(Johnston and Onwuegbuzie, 2004:15)

This view was reflected in this study, where the research design consisted of three phases with multiple methods using a combination of both qualitative and quantitative approaches. At times, methods were employed consecutively to inform the research, at other times methods ran concurrently with data from each method elaborating on and developing understanding of the many facets of the Foundation Phase. This three-phase complementarity mixed-method design and the methods used within the design are outlined in more depth in the next section.

3.2 A mixed-methods design to study the Foundation Phase

This 'complementarity' mixed-method approach combined both qualitative and quantitative methods to increase 'interpretability and meaningfulness' and as such gain a deeper understanding of the Foundation Phase (Greene *et al.*, 1989:

127). In this study the inductive qualitative data was generated in phase one from documentary analysis and interviews. Analysis of the interview data elaborated on and enhanced the data from analysis of curriculum documentation (Greene *et al.*, 1989:127). The combined analysis of data from these methods identified expected outcomes of the Foundation Phase, which informed the choice of research methods for phase two. In order to assess whether these outcomes identified in phase one were achieved, quasi-repeated measures for quantitative data were used (Cohen *et al.*, 2011:316). In addition to the quantitative methods to measure achievement of the outcomes, qualitative methods were used to elaborate on and illustrate the findings with clarification of results from one method with results from another (Greene *et al.*, 1989). The rich qualitative data enabled processes that led to pupils' achievements to be explored and understood in greater depth as highlighted by Greene *et al.* (1989: 136) who comment 'one common purpose for combining qualitative and quantitative methods is to use results from one method to elaborate, enhance, or illustrate the results from the other.' In this study results from quasi-repeated measures identified the motor competency of pupils whilst field notes from participant observation elaborated on the processes that produced these achievements. Observational assessments gave scores for engagement in learning, whilst qualitative observations gave in-depth analysis of how pupils carried out tasks. Thus methods examined 'overlapping phenomena, or different facets of the same phenomena' (Greene *et al.*, 1989:37).

The research design was conducted in three phases. Essentially the analysis of data from phase one informed the data generation and choice of methods for phase two. Phase three analysed a combination of data from phase two of the study with school data to assess the development of pupils' wider learning in the Foundation Phase. Table 3 shows an overview of the research design.

Table 3: An overview of the research design

| PHASE ONE | | | | PHASE TWO | | | | PHASE THREE |
|----------------------|-----------------|----------------------------|-----------------------|-------------------|-------------------------|--|----------------------|--|
| FEB-MAY 2011 | JUNE 2011 | JULY 2011 | NOV 2011 | DEC 2011 | FEB 2012 T1 | JULY 2012 T2 | DEC 2012 T3 | JAN 2013 |
| | Pilot interview | Semi-structured interviews | Respondent validation | Pilot instruments | BOT-2 | BOT-2 | BOT-2 | Analysis of schools' data, with data from phase two. |
| Documentary analysis | | | | | TGMD-2 | TGMD-2 | TGMD-2 | |
| | | | | | Harter Scale | Semi structured interview teachers A & B | Harter Scale | |
| | | | | | | School A & B Reading age | School A Reading age | |
| | | | | | | A&B spelling age | A&B PASS | |
| | | | | | | A&B maths test | Draw a Person | |
| | | | | | Participant observation | | | |
| | | | | | Leuven Well-being | | | |
| | | | | | Leuven involvement | | | |
| | | | | | Social Play continuum | | | |
| | | | | | Child-led tours | | | |
| | | | | | Video | | | |
| | | | | | | Academic learning time | | |
| | | | | | 15 min observations | | | |

3.2.1 Phase one, February 2011 – November 2011

Phase one addressed research question one: What are the learning outcomes of the Foundation Phase in relation to physical literacy? And how are teachers interpreting these outcomes?

Documentary analysis and semi-structured interviews were used to gain an in-depth insight into how teachers interpreted the learning outcomes of the Foundation Phase in relation to physical literacy. An in-depth documentary analysis of the Government curriculum policy documents, guidance for implementation of the new curriculum and ministerial speeches was undertaken. Units of meaning were used to identify themes and inform the semi-structured interviews.

Semi-structured interviews with Foundation Phase staff, head teacher, deputy head teacher, advisor and education minister were conducted and transcribed. These were then analysed to identify units of relevant meaning and coded relating to the interview number and line (e.g. 16: 135 refers to interview 16 line number 135) (Maykut and Morehouse, 1994). Further analysis highlighted clusters of relevant meaning from which six main learning outcomes were identified and confirmed through a process of respondent validation (this process is explained in greater depth in Chapter 4 as part of the findings).

3.2.2 Phase two, January 2012 – December 2012

Phase two addressed research questions two and three: To what extent are these outcomes being achieved? And what processes might be contributing to the achievement of the main learning outcomes?

Six outcomes identified in phase one were grouped together to identify methods for data generation and through piloting (as outlined in more detail later in this chapter) a range of methods were selected for phase two to assess pupils' progress in relation to outcomes identified in phase one.

Following the piloting (November 2011) both quantitative and qualitative methods were identified and phase two was carried out over the period of a year (January to December 2012). Quantitative data was generated by the use of a quasi-repeated three-time measures design. The three measures were used to generate data across a year with one was carried out per school term. Although repeated measures is an experimental design, in this case as the Foundation Phase was a naturalistic intervention there was no control over experimental conditions and as such was a field experiment taking place in the natural setting (Cohen *et al.*, 2011:316). Thus, this was not a traditional repeated measures intervention design with an experimental and a control condition. Rather, all the schools in Wales were required to implement the Foundation Phase, hence it was not possible to have a control condition for quantitative data.

In between the quantitative measures, a range of qualitative tools were used for further data generation to complement the data from the quantitative tools and gain a rich insight into what the children were learning and an understanding of the complexities of the Foundation Phase (Greene, 1989)(how these methods are combined is explained in more depth later in the data analysis section of this chapter). The quasi-repeated measures consisted of three assessments over three terms (at Time T1 February 2012, T2 July 2012 and T3 December 2012). These measures were specifically to assess the development of aspects of physical competence, an attribute of physical literacy. In addition, ethnographic data generation was used to capture the richness and complexity of the Foundation Phase as a learning context and the development of further outcomes identified in phase one, and as such assess the possible contribution of the Foundation Phase on the attributes of physical literacy of motivation, confidence and physical competence, and interaction with the environment.

In order to gain an insight into physical competence as an attribute of physical literacy, pupils' motor competence was assessed using quasi-repeated measures

(three times) testing motor skills. In line with recommendations from the literature (Stodden *et al.*, 2008) a broad-based view of physical competence was used in this study. The Test of Gross Motor Development, second edition (TGMD-2) (Ulrich, 2000) and the fine motor assessments from the Bruininks-Oseretsky Test of Motor Proficiency, second edition (BOT-2) brief form (Bruininks and Bruininks, 2010) was conducted across three times T1 – T3. In addition, to gain an understanding of pupil's effective interactions with the environment, an attribute of physical literacy, observations of pupil behaviour and field notes were used to assess physical activity and embodied learning. In order to assess the attribute of confidence and pupils' independence the Harter Perceived Competence Scale (Harter, 1982), the Leuven Well-Being Scale (Leavers, 1994) and field notes were used. Pupils' motivation (a further attribute of physical literacy) and engagement were assessed with observations using the Social Play Continuum (Broadhead, 2006), Leuven Involvement Scale (Leavers, 1994), Academic Learning Time observations (Berliner 1987; Fisher 1981), the Mosaic approach child led tours (Clark and Moss, 2011) and field notes.

3.2.3 Phase three, July 2012 -February 2013

Phase three addressed research question 4: How is pupils' wider learning developing in the Foundation Phase?

The analysis of motor scores, Goodenough Draw-a-Person Test (Goodenough, 1926) scores and school data was used to explore the development pupils' intellectual development and wider learning in the Foundation Phase. Test scores from the schools' own summative assessments at time T2 and time T3 were analysed alongside the data from phase two.

3.3 Context participants and ethics

Arthur *et al.*, (2012) claim that the sample of participants should depend on the aims of the research. This research sought to evaluate the contribution of the Foundation Phase to pupils' physical literacy and their wider learning. In order to achieve this, two contexts where the Foundation Phase had been implemented

successfully were identified through purposive sampling. Hastie and Hay (2012:38) highlight that gaining the deepest possible insight into an issue requires 'the identification of specific participants, rather than a random sample'. This purposive sampling provides less breadth to the study, but does give greater depth, and in this case 'critical case sampling' was used 'to yield insights that might have wider application' (Cohen *et al.*, 2011:157). This study does not seek 'statistical generalisation' (Yin, 1984:23) but rather 'naturalistic generalisations' (Stake, 1982:7) or 'qualitative generalisations' (Tripp, 1985, cited in Bassey, 1998) where studying these unique cases may highlight aspects that are universal and relevant to other educational settings. Therefore two schools were selected for the study through 'reputational case sampling' (Teddlie and Tashakkori, 2009:74) on the basis of recognition of high quality Foundation Phase provision as identified by government school inspectors and advisors. The selection process involved ESTYN Inspection Reports, Local Authority Self Evaluation Reports, Higher Education Partnerships, and the acknowledgement from the wider professional community. The two schools were also selected for 'maximum variation sampling' to exhibit a 'wide range of characteristics' in relation to their location and as such the nature of the catchment area feeding the schools (Teddlie and Tashakkori, 2009:174).

School A was situated in a small rural village in West Wales. Pupils attended from a catchment area that was neither economically or socially disadvantaged. There were 143 pupils on roll taught in six classes. 18% of pupils had additional learning needs and approximately 7% of pupils were entitled to free schools meals. Nearly all pupils came from homes where the predominant language spoken was English and nearly all pupils were white ethnic backgrounds. One child had English as an additional language (speaking no English or Welsh at home).

School B was situated in a large town in West Wales. Pupils attended from an urban catchment where approximately half of the school's intake came from economically disadvantaged areas. About 40% of the pupils were entitled to free school meals, which was much higher than the average for Wales (21%). The school had 400

pupils on roll in fifteen mainstream classes and two special units that cater for pupils with complex needs. The school identified 34% of pupils as having additional learning needs, which is well above the average for primary schools (22%). Pupils' ethnicity was largely white British (91%) with the remainder mainly Asian or of mixed ethnicity. Twenty-six pupils had English as an additional language. No pupil spoke Welsh at home.

Both schools had large outdoor spaces for the pupils to access at playtime. The classrooms in both schools also opened into an outdoor learning area that was accessed during teaching times (see Appendix A for photographs of school grounds).

Participants ($N=14$) for phase one of the research were all of the Foundation Phase teachers in school A and school B ($n=10$), the head teacher of school A ($n=1$) and the deputy head teacher school B ($n=1$), the Foundation Phase Advisor for the Education Authority ($n=1$) and the Minister for Education at the time of the conception and implementation of the Foundation Phase ($n=1$).

For phase two of the research a year one class in each school was selected for the study. The year one class in school A had twenty-three pupils (thirteen girls and ten boys) in total and the year one class in school B had twenty-six pupils (fourteen girls and twelve boys) in total ($N=49$). The Foundation Phase was implemented in 2008, therefore children in the year one classes had only ever experienced the Foundation Phase Curriculum and the teachers were experienced in its delivery. Although all pupils in the two classes were involved in the study a further smaller group within each class was selected through purposive sampling (Cohen *et al.*, 2011) for the repeated measures assessments. The smaller sample group was selected through discussion with the teachers and support staff to obtain a mixed ability sample based on the teachers' judgment of the children's physical competence. A total of eight pupils from each school were selected for the repeated measures assessments with the TGMD-2, BOT-2 and Harter perceived competence scale assessments. Two further pupils from school B were added to the sample in case of pupil absence,

giving a total of eighteen pupils ($n=18$) for the repeated measures, a number that was deemed to be manageable for administering the tests.

3.4 Ethics

Due to the complex nature of the research design being over three phases and the naturalistic aspect of the research in two school contexts, there were many ethical issues that needed to be considered. The research adhered to the BERA Ethical Guidelines for educational research (2004) and in so doing voluntary informed consent was sought for all participants (see Appendix B (v)). Cohen *et al.* (2011:78) cite Diener and Crandall (1978:57) when defining informed consent as ‘the procedures in which individuals choose whether to participate in an investigation after being informed of facts that would be likely to influence their decisions’. A plain language statement was prepared outlining the purpose and nature of the research. This was given to all participants prior to seeking informed consent. For phase one of the research all the participants were adults and all gave their consent to participate. For phase two of the research the participants were the pupils as well as the staff. In the case of children, the procedures and policies of the selected schools were followed in order to gain consent, prior to commencing any research (see Appendix B (i) - (iii) for plain language statements and consent forms). Cohen *et al.*, (2011) highlight the two stages involved in gaining consent with regard to minors, firstly the permission from those adults responsible for the children and second participant assent from the children themselves. All parents and guardians were given the plain language statement clearly outlining the nature and purpose of research prior to having consent forms to sign giving permission for the children to participate. The children involved were young, aged five and six years old, but as Fine and Sandstrom (1988) suggest, the children were told as much as possible about the study and the reason for the presence of the researcher in the class in order to gain their assent for involvement in the study. This was done through discussion with the researcher and answering their questions about why the researcher was in the class. In so doing the BERA guidance for ‘children, vulnerable young people and vulnerable adults’ was followed.

All data was stored in line with privacy guidance and data protection legislation. All staff and parents were informed in writing of the nature of the research. The researcher worked with staff and head teachers to ensure that participants were not placed under any form of stress by having an open dialogue about the emotional state of participants and not going into the schools at particularly busy times such as Christmas concerts.

3.5 Validity, trustworthiness and legitimation

Onwuegbuzie and Johnson (2006:273) argue that the mixing of methods involves 'combining complementary strengths and non-overlapping weaknesses of quantitative and qualitative research' and as such 'assessing the validity of findings is particularly complex.' They suggest that 'validity in mixed-methods be termed legitimation' and identify nine types of legitimation (Onwuegbuzie and Johnson, 2006:273). This study aligns to multiple validities legitimation, which they consider 'is pertinent in virtually every mixed research study' and which refers to 'the extent to which all relevant research strategies are used' and the how the relevant 'validities are addressed and achieved' for each method (Onwuegbuzie and Johnson, 2006:293). In particular the issues of how these validities are addressed in the integration of the methods which makes the 'whole greater than the sum of its parts' (Onwuegbuzie and Johnson, 2006:293).

In light of this, the notions of validity and trustworthiness need to be explored in relation to the different methods used in this mixed methods study. Although when considering quantitative methods validity will be discussed in relation to this research design, as a whole the concern is with legitimation. Internal validity can apply to all methods, and Onwuegbuzie and Leech (2006:234) define this as 'truth value, applicability, consistency, neutrality, dependability, and/or credibility of interpretations and conclusions within the underlying setting or group'. External validity is concerned with how findings can be generalised. In this study with such small numbers of participants in particular in the repeated measures tests ($n=18$)

any claims of generalization could not be considered valid. The purpose of the methods in this case was one of each contributing a part to the whole picture of the complexity of the Foundation Phase. As this research is underpinned by socio-constructionist ontology, the term trustworthiness associated with an interpretive paradigm is considered more meaningful and therefore in line with researchers in this field (Hammersley and Atkinson, 1994, 2007; Silverman, 2013). This combination of the validity and trustworthiness from the different methods allowed for strong meta-inferences throughout the study (Onwuegbuzie and Johnson, 2006:293).

In order to demonstrate trustworthiness in the research, several steps were taken to reduce bias, ensure credibility and confirmability (Erlandson *et al.*, 1993). Careful piloting of methods was conducted. For phase one the semi-structured interview was piloted with a Foundation Phase teacher not in the study. During the interview every effort was made to establish a rapport between interviewer and interviewee, putting the interviewee at ease. The interviews were recorded to ensure accurate transcription and consistent coding of responses (Cohen *et al.*, 2011). Documentary analysis of Foundation Phase policy and guidance had given insight into the broader aims of the curriculum and expected outcomes, combining the method of documentary analysis and semi-structured interviews gave an insight into the interpretation of the curriculum in the school context of the two schools.

The role of the researcher was considered in the interpretation of the documentation and analysis of the interview data. This was identified as an issue throughout the study and, in order to be aware of this influence, field notes were used for reflection as well as participant observation. In order to address dangers of bias in naturalistic methods, Walker (2012:78) emphasises the need for 'constant attention to self-reflection and self-critique'. This was achieved throughout the study by the constant keeping of reflections in field notes both in the field and retrospectively. Peer debriefing was also used to aid the process of reflection, as highlighted by Lincoln and Guba (1985), the debriefing needed to be with someone

who had a general understanding of the research, therefore a senior lecturer in education was involved in the process throughout the study.

During the analysis of qualitative data into units of meaning (Cohen *et al.*, 2011), attention was given not just to confirming units of meaning in relation to the outcomes of the Foundation Phase being explored, but also to disconfirming units and these were collated into the clusters of relevant meaning (see Appendix C). Research instruments and methods were piloted prior to use in phase two of the study. Published instruments were used when possible and appropriate and the researcher had training in the use in any that were unfamiliar. Inter and Intra-rater reliability was carried out for the motor tests and inter-rater reliability was carried out for observation tools in the classroom. (This is developed further in the discussions relating to the methods).

3.6 Phase one methods and data analysis

Phase one addressed research question one, what are the learning outcomes of the Foundation Phase in relation to physical literacy? And how are teachers interpreting these outcomes?

A combination of documentary analysis and semi- structured interviews was used to ascertain teachers' understanding and interpretation of the learning outcomes of the Foundation Phase within the Foundation Phase documentation in relation to the development of physical literacy.

3.6.1 Documentary analysis

Curriculum documentation and guidance publications were analysed. The documents included the *Framework for Children's Learning for 3 to 7 year-olds in Wales* (DCELLS, 2008a) (the Foundation Phase document), *Making the most of learning - implementing the revised curriculum* (DCELLS, 2008b), *Physical Development* (DCELLS, 2008e) and *Play/Active learning 3 to 7 year-olds* (DCELLS, 2008d). Cohen *et al.*, (2011:250) highlight that published policy reports are a

significant source of evidence in educational research that are ‘important for revealing the assumptions that underlie policy reform’. They do, however, caution that care needs to be taken as reports do not reflect educational policy in a straight forward manner and as they record the ideas and approaches of policy makers ‘may privilege a top-down view of education’ (Cohen *et al.*, 2011:253). They further highlight that documentary sources have been criticised for failing to engage with the classroom context, and the interface between learners and teachers, as highlighted in the literature on curriculum reform (Fullan 1999; Kirk and Macdonald, 2001; Macdonald, 2003). Documentary analysis was used in this study to develop understanding of the information and the underlying values being relayed to teachers. Interesting themes and ideas were identified in the documentation and through constant comparison (Glaser, 1964) coded into themes for exploring in semi-structured interviews with the teachers.

3.6.2 Semi-structured interviews

Semi-structured interviews were carried out with all of the Foundation Phase teachers in both schools ($n=10$), the head teacher of school A ($n=1$), deputy head teacher of school B ($n=1$), the local authority Foundation Phase advisor ($n=1$), and ex minister for education ($n=1$) (a total of $N=14$ interviews). The semi-structured nature of the interviews allowed similar questions to be asked to all participants in a similar order to allow comparability of responses (Cohen *et al.*, 2011). The interview questions were structured to reflect research question one, but in addition the semi-structured nature of the interviews allowed freedom to clarify participants understanding, follow up issues at greater depth, and explore viewpoints that were not foreseen (Newby, 2010) gaining insight to the classroom and school context. Questions were prepared prior to the interview (see Appendix D). Care was taken to ensure that interviewees were relaxed by the use of a quiet, familiar room and general questions not related to the research used to create some discussion. Interviews lasted approximately thirty minutes. All the interviews were transcribed (see Appendix E) and following the initial analysis of data, learning outcomes were identified. These initial outcomes were then presented to teachers for respondent

validation (Lincoln and Guba, 1985; Cohen *et al.*, 2011). Head teachers, Local Authority Advisors and the Government Minister responsible for the implementation of the Foundation Phase were also interviewed as part of the respondent validation process. The learning outcomes identified through this process were used to inform the research methods for phase two.

3.7 Phase two methods

In order to answer research questions two and three a range of quantitative and qualitative methods were piloted in both schools, in-line with the complementarity mixed methods approach to the study.

3.7.1 Piloting

The purpose of the piloting was to test a range of methods to ascertain which would be most appropriate for phase two data generation. Four assessment batteries were piloted for repeated measures linked to research question two. In addition five qualitative methods were also piloted to generate data relating to research question three.

3.7.2 Methods

Following piloting, a combination of methods was identified in order to generate data linked to the learning outcomes identified in phase one and are outlined in more depth in the following section. Table 4 gives an overview of the methods and how they were used in phase two of the research.

Table 4: Phase two methods

| Method | Assessment information (what, when, who) | Data type and quantity |
|---|---|--|
| 1. BOT-2 | Motor proficiency. Fine motor precision (FMP) Fine motor integration (FMI) Sample group ($n=18$) Repeated measures at T1, T2, T3. | Motor proficiency standardized score and percentile rank FMP raw score FMI raw score Three sets of data T1, T2, T3. |
| 2. TGMD-2 | Gross motor skills Locomotor skills Object control skills Sample group ($n=18$) Repeated measures at T1, T2, T3. | Gross motor quotient Percentile rank Locomotor standardized score and percentile rank Object control standardized score and percentile rank Three measures sets of data, T1, T2, T3. |
| 3. Harter perceived physical competence scale | Self-perception of physical competence Sample group ($n=18$) T1 and T3 | Mean score per child between 0 and 4. Two sets of data T1, T2 |
| 4. Leuven Well-Being Scale | Well-being Selected children in the classes in the study Throughout phase two | Individual score per child of 1 -5 42 observations of 17 pupils in total |
| 5. Leuven Involvement scale | Involvement and engagement in learning Selected children Throughout phase two | Individual score per child of 1 – 5 63 observations of 35 pupils in total |
| 6. Social Play continuum | Sociability of play Children in the classes in | Indication of progression across four domains of |

| Method | Assessment information (what, when, who) | Data type and quantity |
|---|--|---|
| | the study Throughout phase two | social play Observations of eight pupils |
| 7. Child led video tours (mosaic approach) | Childs experience of the learning environment Children in the classes in the study Throughout phase two | Film and narration 47 films in total |
| 8. Participant observation field notes | Analysis of learning environment, behaviours and activities All staff and pupils involved in the study Throughout phase two of the study | Field notes 228 pages in total |
| 9. Video | Analysis of learning environment, behaviours and activities All staff and pupils involved in the study Throughout phase two of the study | Film footage 89 videos in total |
| 10. Academic Learning Time observation | Analysis of engagement in task Selected pupils Throughout phase two | Detailed observational comments Four observations |
| 11. Semi-structured interview | Staff perceptions and interpretations of pupils learning Class teachers ($n=2$). | Interview transcript Two interviews |
| 12. Fifteen minute observations | Sedentary and non - sedentary learning All pupils in study Throughout phase two | Numbers of pupils seated at tables working 10 days across T1, T2 T3 five per school |

1. The Bruininks-Osteretsky Test of Motor Proficiency, Second Edition (BOT-2), Brief Form is designed to provide a 'reliable and efficient measure of fine and gross motor control skills' (Bruininks and Bruininks, 2010:1). The test-retest reliability is high

(reliability coefficients range from the mid-70s to mid-80s). The validity has been demonstrated for the assessment of the overall motor proficiency of individuals aged four to twenty-one and inter-rater reliability coefficients are very high (.98 and .97) (Bruininks and Bruininks, 2010:28). The BOT-2 Brief Form assesses proficiency across eight content areas: Fine Motor Precision, Fine Motor Integration, Manual Dexterity, Bilateral Coordination, Balance, Speed and Agility, Upper-Limb Coordination and Strength. This test is used by a range of professionals for assessment of motor proficiency and, although some aspects of the test were not relevant to this study, it was selected due to the need to assess fine motor skills that had been identified in the learning outcomes in phase one. The BOT-2 Brief Form was also selected as 'it is easy to administer and score and it is fun for the examinees' (Bruininks and Bruininks, 2010:1). The BOT-2 Brief Form is a standardised test and therefore the guidelines for administration were strictly adhered to.

The test was administered to the sample group of children from both schools ($n=18$) as a quasi-repeated measures at T.1 February 2012, T.2 July 2012 and T.3 December 2012. Established guidelines were used to administer the test. The area was prepared prior to testing. A table and two chairs were arranged so that the examinee could sit comfortably with his or her feet on the floor. A ten-foot line was placed on the floor with tape and an end line as per the guidelines (Bruininks and Bruininks, 2010:1). The pupil's hand/arm and foot/leg preference was established prior to the test for both the drawing activities and the ball control activities. It was ensured that appropriate footwear was worn for active tasks. The test was administered to one pupil at a time in a large corridor area outside the classroom away from distractions and noise. The scoring and administration rules were followed throughout. Pupils were taught the task using the photos on the easel physical demonstration and verbal instructions to ensure the examinee understood the task. The assessment consisted of twelve tests and all the scores were recorded on an individual score sheet. Scores were analysed as per the instruction manual to give raw scores for each of the eight content areas, a total raw score, standardized score and percentile

rank. Of particular importance for this study were the scores for the fine motor precision and fine motor integration as these were needed to assess fine motor skills, which were identified as a learning outcome in phase one of the study.

2. The Test of Gross Motor Development, second edition (TGMD-2) is a criterion- and norm-referenced standardized test that quantitatively assesses the fundamental motor skill (FMS) performance of children between the ages of three and ten years, consisting of two sub-tests measuring object control and locomotor skills. The TGMD-2 was selected as it provided a valid and reliable measure of fundamental motor skill performance. The reported internal consistency reliability coefficients for children aged three to ten years on the TGMD-2 OC skill sub-scale all reached or exceeded .87 in magnitude (Ulrich, 2000). This test is a widely used instrument in motor development literature (Goodway and Branta, 2003; Hamilton *et al.*, 1999; Valentini and Rudisill, 2004a; 2004b).

The TGMD-2 evaluated performance in two subsets of locomotor and object control. The pupils were assessed for six locomotor skills (run, gallop, hop, leap, horizontal jump and slide) and six object control skills (striking a stationary ball, stationary dribble, catch, kick, overhand throw and underhand roll) with a total possible raw score of forty-two for each subset. The TGMD-2 was administered to the sample group of children from both schools ($n=18$) as a quasi-repeated measures at T.1 February 2012, T.2 July 2012 and T.3 December 2012.

For effective administration of the assessment the standardized and established guidelines were followed for each participant. The playground was used in both schools to administer the test and the area was prepared prior to the test as per the instructions in the manual. Two pupils were tested at a time and the sequence of the pupils alternated. Appropriate footwear was worn for active tasks. Each skill was demonstrated exhibiting all behavioral components. Children completed one practice and two formal trials. Trials of the TGMD-2 were videotaped for coding and inter- and intra-rater reliability. The independent rater was a professor in physical

education and motor development, highly experienced in the use of the TGMD-2. Each skill was evaluated on three to five performance criteria. A score of zero was given for each trial if a criterion was not performed and a score of one was given for each trial if a criterion was performed. The locomotor subscale yields a raw score that was converted to an age-specific standard and percentile score. The object control subscale yields a raw score that was converted to an age- and sex-specific standard and percentile score. The raw subset scores were converted to standardized scores and combined to give the Gross Motor Quotient (GMQ) which Ulrich (2000:3) states 'is the best measure of an individual's overall gross motor ability'. Inter-rater reliability was conducted through the use of video for 30% of the assessments.

3. The Pictorial Scale of Perceived Competence and Social Acceptance (PSPCSA) (Harter and Pike, 1984) was designed to measure students' self-perceptions of competence and contains four subscales (perceived cognitive competence, perceived physical competence, perceived maternal acceptance, perceived social acceptance) (Harter, 1982; Harter and Pike, 1984; Valentini and Rudisill, 2004). For this study only the subscale of physical competence was used. This subscale consisted of six items (good at swinging, good at climbing, can tie shoes, good at skipping, good at running, good at hopping).

The physical competence subscale of the PSPCSA was administered to the sample group of children from both schools ($n=18$) at T1 and T3. The pupil's task was first to select the picture that was most like him or herself: one picture depicts a child who is competent and the other shows a child who is not as skillful. Half of the pictures depicted the more competent child on the left the other half on the right. Then, the child focused on the designated pictures and indicated whether he or she is just a little bit like that child or a lot like that child (Valentini and Rudisill, 2004). There were separate pictures for boys and girls although the activities depicted in each item were identical for girls and boys. Only the gender of the target child was different, so that a subject could respond to pictures depicting a same-gender child

(Harter and Pike, 1984). Each item was scored on a four-point scale, where a score of four would be the most competent and a score of one would designate the least competent (see Appendix F) the mean of the scores was calculated for each child.

4. The Leuven Well-Being Scale for Young Children (LWBS-YC) is part of a process-oriented self-evaluation instrument for care settings (SiCs) (Laevers *et al.*, 2005). The approach uses two indicators of quality, well-being and involvement. The complete self-evaluation has three steps; assessment of well-being and involvement, explanation through analysis of the levels observed, selections of actions for improvement. For this study the assessment tools for step one were used. Well-being 'refers to feeling at ease, being spontaneous and free of emotional tensions and is essential to secure mental health' (Laevers *et al.*, 2005:3). The LWBS-YC is a five-point scale, which gives a score for well-being based on a set of observed behaviour or signals (see Appendix G).

The LWBS-YC observations were carried out throughout phase two of the study between T1 and T3 in both schools with forty-two observations in total with seventeen different pupils. The observations were carried out when the researcher saw an appropriate opportunity at times when pupils were working in groups. The assessment was administered as per the guidelines in the SiCs manual (2005). Observations were carried out in activities that were 'the normal course of affairs' (Laevers *et al.*, 2005a:2). When children were working in groups on a task, the names of the pupils were recorded on the observation sheet. The group size observed ranged from three to nine pupils. The group was scanned for several minutes then pupils observed individually and scored for well-being.

5. Leuven Involvement Scale for Young Children (LIS-YC) is part of the SiCs self-evaluation instrument (as above) and has been devised as an assessment tool for identifying deep level learning (Laevers, 1994). 'The concept of involvement represents one of the central axes in experiential theory' (Laevers 1997:4). Work by Laevers (1993; 1994) to operationalize this notion resulted in the construction of

the Leuven Involvement Scale (LIS). The Leuven Involvement Scale for young children (the LIS-YC) is a five-point scale and focuses on young children (three to six years.). During the rating process a series of signals are attended to: concentration, energy, complexity and creativity, facial expression and posture, persistence, precision, reaction time, verbal utterances and satisfaction (Laevers, 1997). The key aspect of the scale is the five levels of involvement. Level one means: no activity; Level two: frequently interrupted activity; Level three: more or less continuous activity; Level four: activity with intense moments, Level five: sustained intense activity (Laevers, 1994). The LIS-YC was used to observe the level of involvement and as such pupils' engagement in their learning during various tasks and activities in the Foundation Phase.

The LIS –YC observations were carried out throughout the time of phase two of the research between T1 and T3 in both schools with sixty-one observations in total with thirty-five different pupils. The observations were carried out when the researcher saw an appropriate opportunity with pupils working in groups. There was no pre-determined time allocated for the observations. The observations were carried out as per the manual during activities that were 'the normal course of affairs' (Laevers *et al.*, 2005:2). The group size observed ranged from three to nine pupils.

6. The Social Play Continuum (SPC) is an observation tool that allows educators to identify and illustrate progression from sociability to cooperation across four increasingly social and intellectually challenging domains (Broadhead, 2006). The SPC has been designed tested and refined over many years and documents the language and action of interacting peers in nursery, reception and year one classrooms (Broadhead, 1997, 2001, 2004, 2006). Pupils in these settings are aged three to six years old and so the continuum is appropriate for the children in this study who are in year one, aged five to six years old.

Eight observations were carried out between T1 and T2. These were carried out

when the researcher noticed an appropriate opportunity for observing social play. One of the observations was planned in response to 'extreme case data analysis' from field notes (Carnacelli and Greene, 1993:235). This was an example of how the methods complemented each other with data from the SPC used to explore overlapping facets of the curriculum identified in data from field notes. The observations were completed at times when the children had selected activities and were engaged in free play. The SPC consists of two sides. Side one is for the observation of the play across the four domains, side two is for reflection and categorization of the play (see Appendix H). Information recorded on side one includes the start and finish time of observation, pupils involved, those entering and leaving and the area of provision (Broadhead, 2004). During the observation period, use of language, observed behaviour and interactions were noted using ticks and/or notes.

7. Child-led video tours. Child-led tours are aspect of the Mosaic approach (Clark and Moss, 2001, Clark, 2005). The Mosaic approach is a multi-method process for listening to young children and gaining an insight into their learning experiences from their own perspective (Clark and Moss, 2001). Tours led by the children and filmed using hand held 'Flip' cameras allowed the children to talk freely about their experiences in the learning environment. Clark and Moss (2001) identify the physicality and mobility of the technique as a way of understanding children's priorities that otherwise may become lost. The mosaic approach was developed to discover the world of young children and acknowledges that they are experts in their own lives (Clark, 2004). The approach has two stages. The first stage combines traditional methods of observation and interviewing with the participatory tool of tours. The child takes the researcher on a tour to record with a camera 'what is important here' (Clark, 2005:13). The second stage pieces all the information together for reflection and analysis creating a picture (mosaic) of the world as experienced by the child. For the purpose of this study the element of tours was adapted and used. Pupils in the classes were familiar with the use of small video cameras known as 'flip cameras'. It was explained to the children that if they would

like to go and film places that they liked to play and work that they could take the flip camera for a tour.

A total of forty-seven tours were filmed by pupils throughout phase two of the study between T1 and T3 in both schools. Pupils were asked to film and explain as they were filming why they liked the place they were filming and what they did there. All pupils in both schools were able to ask for the camera and there was no restriction on the number of tours each child could do. Further issues relating to the use of video are discussed in point nine.

8. Ethnography and participant observation seek to understand complex systems and organizations, and are concerned with the meanings of actions and events to people in their own context (Spradley, 1980). Ethnographic methods are 'very powerful in addressing the processes of causation' (Cohen *et al.*, 2011) and yield considerable authenticity. Participant observation involves the writing of descriptions and accounts of what was observed in situ investigating aspects in 'all their complexity, in the naturalistic context' (Cohen *et al.*, 2011:227; Gray, 2014). A participant observer attempts to 'enter the lives of others' as Polanyi states 'to indwell' and in so doing suspend as much as possible their own ways of viewing the world (cited in Maykut and Morehouse, 1994:69). This method is particularly relevant for this study as it seeks to answer the question what is happening here? And is concerned with gaining a deep understanding of people in a given situation (Maykut and Morehouse, 1994; Spradley, 1980; Van Manen 1988; Walker, 2012). For this study participant observation is an important method. In a naturalistic setting 'the context is an important source that aids understanding and interpretation' (Newby, 2010). It is a useful method when, as in this case, 'a long time is available to 'get under the skin' of behaviour or organizations' (Cohen *et al.*, 2011:465). Defining the nature of participant observation is not clear, but for this study the observer-as-participant view was adopted where the researcher was not a member of the group, but did at times participate in the activities and the role of researcher was clear and overt (Atkinson and Hammersley, 1994; Gold, 1958). As

an observer-as-participant in the research context, care was taken to reduce the 'intrusion and intervention into the social system' (Cohen *et al.*, 2011:233). Prior to phase two of the study, piloting of research methods enabled the researcher to become familiar with the settings and for the children in the study to become familiar with the researcher. By remaining with the participants for a substantial period of time (one year in this case) reactivity effects were reduced (Cohen *et al.*, 2011). Cohen *et al.* (2011:233) highlight that 'managing relations is critical'. Swain (2006, cited in Cohen *et al.*, 2011:233) identifies how researchers in schools may need to switch roles from 'completely passive observers to being completely active participants as the situation demands.' In order to maintain an awareness of these issues the field notes throughout this study were used not only to record observations of the classroom life but also reflections on the process of data generation and interaction with the pupils and staff. Peer debriefing was carried out with a senior lecturer in education in order to aid the reflexivity and heighten awareness of issues relating to bias and influence on data generation.

Using naturalistic methods requires 'constant attention to self-reflection' (Walker, 2012:78). Throughout the study, field notes were written both in situ and also away from the situation. Immediacy in recording field notes helped to overcome problems of reliability (Lofland, 1971) whilst writing some field notes later helped to ensure there was 'a detailed record of both objective observations and subjective feelings' (Spradley, 1980:58) and maintain a high level of reflexivity. Reflexivity recognises, as Hammersley and Atkinson (1983:14) highlight, that 'researchers are inescapably part of the social world they are researching' and therefore 'bring their own biographies to the research situation' (Cohen *et al.*, 2011:225). It is important that a researcher is aware of and acknowledges involvement and influence on the research process. Reflexivity throughout the research process reduces problems of trustworthiness, as does the use of multiple methods and training in the use of instruments. Cohen *et al.* (2011:474) also highlight the importance of 'the necessary experience to make informed judgments from the observational data'. This was the case in this study, where the researcher had fourteen years previous experience as a

primary school teacher. Reliability is also improved by 'focus on detail' (Cohen *et al.*, 2011:474) and in order to reduce the 'tendency to translate and simplify' situations that were observed, every effort was made to adhere to the 'Verbatim Principle', which requires the observer to 'make a verbatim record for what people say' (Spradley, 1980:67). Field notes were kept throughout the study commencing during the piloting stage of phase two prior to T1 and after T3 into phase three. Pages and lines in the field note journals were numbered clearly in order to have a clear trail of all comments back to their source throughout the process of analysis. During the pilot phase fifty-three pages of field notes were recorded. During phase two 228 pages of field notes were recorded, a total of 281 pages of field notes.

9. Video and moving images are part of the everyday lives of many people and it is now more common than ever to use video cameras as a tool for generating data in research (Sparrman, 2005; Cohen *et al.*, 2011). Sparrman (2005:243) highlights many examples where film and photography have 'long been used as research tools in the field of visual anthropology' (Bateson and Mead, 1942; Banks, 1995; Banks and Morphy, 1997). Banks and Morphy (1997) in particular suggest that video recording complements participant observations and field notes. Cohen *et al.*, (2011) identify the strength of video as its ability to 'catch both the everyday routines and practices of participants and also special events'. There are, however, drawbacks in relation to how such rich complex data is analysed and also how video is selective and only captures the area that the camera is fixed on (Cohen *et al.*, 2011). Sparrman (2005) raises many issues about the use of video, highlighting the importance of consideration of how the video camera is placed and used in relation to the children and its impact on them. For the purpose of this study the emphasis was on the use of video to capture the context of the Foundation Phase in particular when many different activities were happening, as it allowed for field notes to still be written and be complemented by film footage. The children were very familiar with the type of camera that was used and video was often used by the schools for capturing pupils' work. Flick (2014) also highlights issues of ethics in relation to data protection and for this study consent forms all included permission for film and

secure storage of this data was ensured at all times. Video was used in the pilot stage and throughout phase two from T1 to T3. During piloting, fourteen videos were filmed in School A and nine in School B. During phase two twenty nine videos were filmed in School A and thirty-seven were filmed in School B, giving a total of eighty-nine videos.

10. Academic Learning Time (ALT) originally used in the 1970's in reading in maths was later adapted for use in physical education (ALT-PE) (Seidentop, Birdwell and Metzler, 1979). ALT-PE is used to assess the amount of time students spend engaged successfully in the activities related to the lesson objectives (Seidentop and Tannehill, 2000). Following piloting, the highly structured nature of ALT-PE, which identifies highly specific learning outcomes, was not found to be effective in the open creative approaches of the Foundation Phase. The Academic Learning Time Observation System (ALTOS) was designed to 'characterize how elementary level pupils spend their time during the school day' (Frick and Reith, 1981:1). This system also involves a detailed coding of the time in relation to highly specific outcomes for the lesson being observed. Although a very detailed observation of the use of the pupils' time was required, the nature of the tasks set in the Foundation Phase meant that pupils were often selecting activities and changing from one task to another, making the coding difficult to achieve. ALT- PE requires the observer to observe a selected student for five seconds and during the next five seconds record the code for the activity, thus completing a ten second interval (Seidentop *et al.*, 1982). ALTOS uses time sampling at one-minute intervals (Frick and Reith, 1981). For this study an adaptation of the ALT-PE and ALTOS was used using the same highly structured observation technique, but with observation for ten seconds and recording of the behaviour observed for twenty seconds giving thirty-second intervals. With the variation in activities in the Foundation Phase allocating codes was not practical, and this adaptation of ALT allowed for the actual observed behaviour and activities to be recorded. Four ALT observations were carried out during the study between T2 and T3.

11. Semi-structured interviews were used at the end of T2 when pupils were completing time with one teacher and about to progress to the next class. The class teachers ($n=2$) were interviewed at this stage in the research to gain insight into the teachers' reflections of the academic year and the pupils' progress. Each of the interviews took approximately thirty minutes. The rationale for the use of semi-structured interviews is discussed earlier in this chapter in phase one research methods.

12. Fifteen-minute observations of activity were used in this study to ascertain the amount of time that pupils were active in their learning. This was not an assessment of student activity levels associated with 'opportunities for students to be physically active and become physically fit' as described in the System for observing Fitness Instruction Time (SOFIT) (McKenzie and Sallis, 1992). This study was not concerned with physical activity in the sense of levels of MVPA, but with activity in the sense of play-based learning, where pupils are not expected to be sedentary and remain at desks for long periods of time. The fifteen-minute observations consisted of a sweep of the class and a record of the number of pupils not sitting at desks. The data recorded was dichotomous where the students were either active or not active. This was not a validated research instrument, but was used to gain a more in depth picture of the amount of time pupils were spending at desks and the amount of time they were moving about during their tasks. The numbers were recorded in the field notes journal. There were times when the counts were missed due to being involved in other observations, of administering other tests. Observations were carried out over ten days, five in School A and five in School B over the time of phase two, T1 to T3.

3.8 Phase three methods

Phase three addressed research question four: How is the development of physical literacy impacting on children's wider learning across the Foundation Phase curriculum? Data from several sources was analysed to explore pupils' wider learning. The schools' own assessments gave scores for academic performance of

reading age, spelling age and maths scores as well as pupils' attitudes to self and school. The Goodenough Draw-a-Person test was also used to obtain a mental age for each pupil.

1. The Goodenough Draw-a-Person test (Goodenough, 1926) is used to assess children's creativity, mental age and visual-motor intellectual maturity by coding the features of a drawing of a person and 'assigning points to the presence of certain attributes such as ears; the quality of the drawing (for example how the lines meet and whether they are rigid); and the proportionality of the head, feet, hands, etc.' (Crusco, 2013:2). The tests give a mental age score for each drawing. The test was administered to the pupils in both schools between T2 and T3 at times during lessons when they could sit and quietly draw their person. The directions for administering the test were followed and the drawings scored according to the instructions on the test procedures (see Appendix C). Issues of reliability are a concern with this test, as judgments about the drawings are subjective, made by the researcher (Kellmer *et al.*, 1963). Therefore drawings were not scored in situ in the classroom, but later to ensure time for careful analysis of the detail. Kellmer *et al.* (1963) found reliability was low with children aged seven to ten years. However this study was concerned with younger pupils and following the work of Goddard Blythe (2005) the test was deemed to be clear and effective for the age of the children in the study.

2. Reading age. The schools both administered a reading test to all pupils. School B at T2 and School A at T2 and T3. The teachers in the schools converted the results from the reading scores into a reading age.

3. Spelling age. Both schools administered spelling test to all pupils at T2. The teachers from the schools converted the spelling test score into a spelling age.

4. Maths scores were obtained through the completion of 'Snapshot', a maths assessment programme that gives each pupil a level that schools equated to a Curriculum Level. This was administered in both schools at T2.

5. Pupils Attitudes to Self and School Rating Scale (PASS) is 'an all-age attitudinal survey that provides a measurement of a pupil's attitudes towards themselves as learners and their attitudes towards school, suitable for pupils aged four to eighteen plus. The psychometric measurement has been standardised against a representative national sample of more than 600,000 respondents and is used in over 2,500 schools across the UK, as well as over 100 Local Authorities' (GL Assessment, 2014). Both schools administered the PASS assessments at T2 and on completion of the test the responses of the pupils were analysed by the Testwise software and returned to the schools. The PASS for the age of the pupils in the study measured standardised factors, which cover:

- Feelings about school setting and attendance
- How capable and confident s/he sees themselves as a learner
- How positive or negative s/he feels in terms of learning and self-concept
- Their preparedness for and approach to learning situations
- Their attitudes and response to learning and the curriculum.

(W3 Insights, 2013:2)

The results from these tests were analysed in relation to data from phase two of the research and the results are reported in Chapter 6.

3.9 Analysis of data

3.9.1 Quantitative data analysis

The quantitative methods used several forms of analysis. These are outlined below:

In order to ascertain changes in physical competence in the Foundation Phase the TGMD-2 and BOT-2 were used. This aspect of the study was concerned with whether physical competence as measured by TGMD-2 and BOT-2 would change across the Foundation Phase from Time T1 to Time T2 to Time T3. Therefore an Anova with repeated measures was conducted on the standard score from T1, T2 and T3.

In order to ascertain if children's perceived physical competence changed across the Foundation Phase paired sample t-tests were conducted between T1 and T3.

In order to examine how children's perceptions of their physical competence compared to their actual motor competence a Spearman's rank order correlation was conducted on the TGMD-2 GMQ at T3 and compared to the perceived physical competence data from the 6 item scale scores, which was also collected at T3.

Levels of activity were assessed with regular observations of pupils engaged in sedentary or non-sedentary behaviour. A chi-squared analysis was conducted to see if there were differences in the physical activity data by school.

Leuven Scale observations measured the levels of pupil engagement in learning and a chi-squared analysis was undertaken to examine if engagement levels were different if the teacher selected the task or the child selected the task.

In order to compare physical competence scores with mental age scores a Pearson rank correlation was conducted between mental age and motor test scores at time T3.

3.9.2 Qualitative data analysis

Qualitative data was analysed using the constant comparative method of inductive data analysis, first developed by Glaser and Strauss (1967) and drawn upon by Maykutt and Morehouse (1994). This process involved the identification of units of

meaning within the data. These were compared to other units and where similarities occurred, grouped into clusters of relevant meaning. From these clusters of relevant meaning, categories and themes emerged.

Videos were analysed through a similar process. Footage was coded and labeled into themes.

Child-led tour films were labeled and coded into themes that reflected the places they were filmed and the activities that the children described.

3.9.3 Combining the analysis of multiple methods

With the acknowledgement of the growing field of mixed-methods research is the recognition of the challenges of combining differing paradigmatic positions (Tashakkori and Teddlie, 1998). One of these challenges is the analysis of data from multiple methods during the analysis stage and not just at the interpretation stage (Greene *et al.*, 1989). This study drew on the work of Carnacelli and Greene (1993:233) who identified analytical strategies for the integration of data from multiple methods and in so doing ensured that there was 'integration during both analyses and interpretation.' Several analytical strategies were used throughout the study and are explained in this section with examples in relation to the methods and the data.

1. Data Transformation is 'the conversion of one type of data into the other so that both can be analysed together' (Carnacelli and Greene, 1993:235). In this study, qualitative data from the field notes and from the child-led tours identified the time spent learning outdoors during phase two. This was converted into quantitative data to enable statistical analysis using chi squared. This gave an insight into the amount of time spent learning outdoors in the two schools

2. Typology Development is the analysis of one set of data to produce categories 'applied in analyzing the contrasting data type' (Carnacelli and Greene, 1993:235). In this study, analysis of the qualitative data in phase one from the documentary analysis and the semi-structured interviews produced a set of outcomes that were used for the analysis of the data in phase two from the quasi-repeated measures in relation to motor competence. Alongside this in phase two analysis of qualitative data from observations and field notes was used to give an 'explanatory variable for the statistical analysis' (Carnacelli and Greene, 1993:235)
3. Extreme Case Analysis identifies 'extreme cases' from the analysis of one data type which are 'pursued via analysis of data of the other type' (Carnacelli and Greene, 1993:235). In this study analysis of data from field notes identified case studies that were further explored using The Social Play Continuum and Academic Learning Time Observations during phase two. Data from these observations was analysed in relation to existing literature and research in the interpretation stage. This produced theoretical memos linking theory to the data, which informed further data generation from ethnographic analysis and enabled 'a deeper and better understanding of the complex interrelationships among educational inputs, educational processes and educational outcomes' (Fry, Chantavanich and Chantavanich, 1981).
4. Data Consolidation / Merging is the 'joint review of both data types to create new or consolidated variables or data sets' (Carnacelli and Greene, 1993:235). In phase two of the study, video footage was analysed alongside Leuven observations, Academic Learning Time observations and field notes to create qualitative narratives for further analysis and interpretation. Merging data into narratives enabled integration of analysis with data from semi-structured interviews at T2. This further analysis identified new variables in relation to teacher behaviour and classroom climate that allowed for deeper insights from new data (Carnacelli and Greene, 1993:242).

3.10 Conclusion

This chapter outlined the methodology and research design for the generation of data to answer the research questions (identified in Chapter 1). The complex nature of the Foundation Phase curriculum as a naturalistic intervention highlighted the need for a pragmatic approach to the research. Drawing on the field of mixed-methods as a new research paradigm a complementarity mixed-methods design was used. This chapter outlined the rationale for this methodology in relation to the research methods literature, in particular that of Greene, Caracelli and Graham (1989) and Johnston and Onwuegbuzie (2004) who suggest that a mixed-methods approach offers the best chance of answering research questions in complex and challenging phenomena.

The research design was outlined in depth, showing how the three phases were related and how the methods complemented the generation of data across and within the three phases. Ethical considerations were highlighted, as well as the rationale for the selection of schools and participants. The next chapter (Chapter 4) will report the findings from the data generated in phase one of the research, focusing on the Foundation Phase curriculum, policy and implementation. This will be analysed and discussed in relation to literature and existing research outlined in the previous chapter (Chapter 2).

Chapter 4 - Foundation Phase curriculum, policy and implementation

The purpose of this chapter is to report the findings from phase one of the research, answering research question one which asks ‘What are the main learning outcomes of the Foundation Phase in relation to physical literacy and how are teachers interpreting these?’ The chapter reports on data from the documentary analysis and semi-structured interviews carried out in phase one of the study. Through analysis of this data the chapter explores in depth the nature of the Foundation Phase and how this curriculum was being interpreted in the two selected schools. It identifies the aim of the Foundation Phase, key features of this curriculum and six learning outcomes in relation to physical literacy. The findings from phase one were used to inform the data generation process for phase two of the research (as outlined in Chapter 3).

The construction and implementation of the Foundation Phase in schools is part of the process of curriculum change. The key features and learning outcomes identified in this chapter were used to ascertain the impact of the new curriculum and the fidelity of its implementation, in line with the original philosophy of the approach. The findings from this study relate to the wider issues around the implementation of curriculum change in schools and the growing acknowledgement of complexity theory in educational change. Analysis relates the learning outcomes of the Foundation Phase to physical literacy and in so doing locates the research in the field of curriculum change in Physical Education.

The first section of this chapter focuses on the nature of the Foundation Phase, the level of prescription in this new curriculum and the guidance for its implementation. The second section examines the rationale and aims of the Foundation Phase, exploring how the philosophy was developed at policy level and identifying key

features of the curriculum in order to ascertain the fidelity of implementation in the two selected schools. The third section explores the role of the teacher as a key agent of curriculum change in interpreting and implementing the curriculum and identifies the learning outcomes of the Foundation Phase. The final section of the chapter discusses how the learning outcomes were related to attributes of physical literacy.

4.1 The nature of the Foundation Phase

The Establishment of the National Assembly for Wales in 1999 saw the beginning of a process of devolution resulting in an education system that is distinct and very different to England, appropriate to the needs of Wales (Maynard and Waters, 2007).

Specific features of the new approach are the requirements to build the curriculum, in part, from the interests of the child (DCELLS, 2008a:6) and to use the outside space as a learning environment (DCELLS, 2008a:4; Waters and Maynard, 2010). The Foundation Phase is for children aged from three to seven years (the English Foundation Stage now being for children from birth to five years). Reception class, year one and year two children are protected from the impact of the more prescriptive approaches associated with Key Stage 1 of the National Curriculum by affording them more informal learning experiences (Maynard, 2007). The Foundation Phase is described as a 'framework for children's learning' (DCELLS, 2008a). With 'framework' defined as 'a basic structure underlying a system, concept, or text' (Oxford dictionary, 2013) the use of this terminology implies from the outset that this curriculum has less prescription. Government guidance reinforces this stating that one of the aims 'is to reduce prescription and give control and responsibility back to schools and to learners themselves' so that there is 'flexibility in planning' (DCELLS, 2008b:7).

The subsequent Foundation Phase framework advocates an experiential, play-based approach to learning in which practitioner-directed activities are balanced with

those initiated by children (DCELLS, 2008a; Maynard *et al.*, 2011). The Foundation Phase framework identifies seven areas of learning with outcomes linked to National Curriculum Level Descriptions. These areas are not approached in isolation but form part of a holistic, integrated and cross-curricular approach with an emphasis on the development of skills (WAG, 2007:6). The seven areas of learning are:

- Personal and Social Development, Well-Being and Cultural Diversity
- Language, Literacy and Communication Skills
- Mathematical Development
- Welsh Language Development
- Knowledge and Understanding of the World
- Physical Development
- Creative Development.

(DCELLS, 2008a:2)

This new approach means that subjects in their traditional form no longer exist, including the subject of Physical Education. This is a clear move away from the situation described by Young (1998:17) where the view was that 'learning should become specialised as early as possible and give minimum emphasis to relations between the different subjects.' With the removal of the emphasis on subject content knowledge, the guidance for each of the areas of learning has been significantly reduced from previous curriculum documentation, consisting of less than two pages for the Physical Development area of learning. Young (1998:22) suggests that if prescription on schools is reduced 'teachers will need a more sophisticated theory of knowledge and the curriculum.'

The seven areas of learning are planned and delivered in three different aspects. These are: the continuous environment, enhanced provision, and focused tasks (Fig 1).

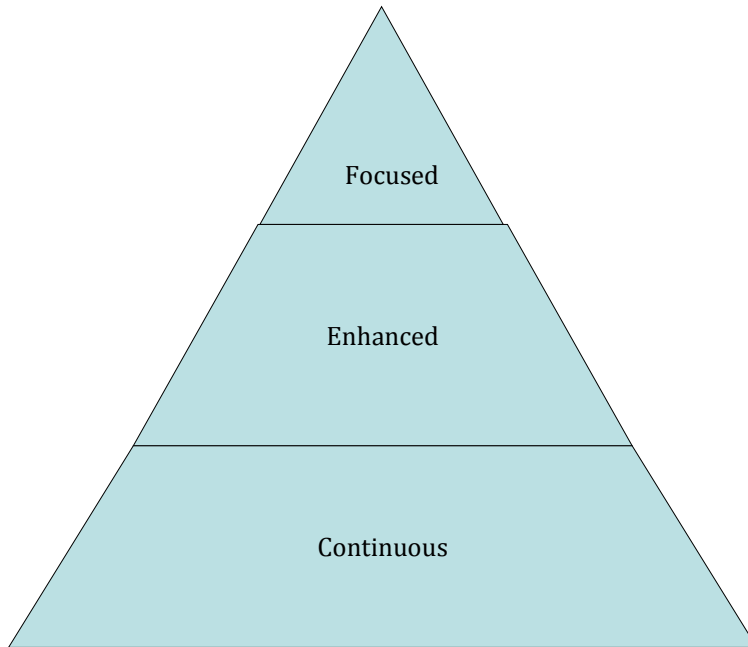


Fig 1. The Three Aspects of the Foundation Phase

The continuous provision is the 'continuous' learning environment, both indoors and outdoors, the layout of the classroom, the learning areas and the resources available in these areas. The enhanced provision is the introduction of resources or activities that move learning forward linked to a specific topic or theme. The focused provision is the more traditional adult-led / taught session, that may be with the whole class or a small group of children. All three aspects may influence each other, for example, observations of children playing in the continuous environment may identify aspects of development that need more focused work. The learning environment is a key aspect of the Foundation Phase with children needing spaces arranged and equipped, which promote active learning (Hohmann and Weikart, 2002) and are more than just a place to facilitate learning as Papatheodorou (2010:145) argues 'they (spaces) shape and condition how we feel, think and behave.' The continuous provision is a well-planned space that gives many

opportunities for children to develop through both child-initiated and adult-led play activities. Evidence shows that the organization of the classroom, the resources and the design of educational spaces, affect children's learning (Papatheodorou and Ramasult, 1994; Penrose *et al.*, 2001) and the management of these spaces is crucial to allowing children autonomy in their learning.

The combination of continuous, enhanced and focused provision, along with the balance of adult-led and child-initiated learning, has resulted in the unique nature of the Foundation Phase. Analysis of the documentation highlights the reduced prescription in the guidance, and identifies the Foundation Phase as a framework around which teachers and schools construct children's learning experiences. The rationale for this shift in educational approach is discussed in the next section.

4.2 Rationale and aims of the Foundation Phase

This second section explores the Welsh Government's rationale for the change from early years and Key Stage 1 provision to the Foundation Phase. It identifies the key social and economic drivers of that change and the influences of global best practice in early years provision on the development of this new curriculum model. The section will draw on a combination of primary and secondary data including policy documentation, literature, speeches, and an interview with the then Minister of Education to provide a clear insight into the underpinning philosophy and aims of the new curriculum. Through analysis of documentation, interviews, and studying the nature of open curricula, the key features of the Foundation Phase are identified, which can be used to assess the fidelity of the implementation in the two schools.

Concerns about the early introduction of formal, sedentary activities (WAG, 2003), putting children "behind desks far too early.....seeing that the poorest children were being left behind more speedily" (M1) and the negative impact that this might have on children's motivation to learn led to proposals for the Foundation Phase for Wales (ACCAC, 2004; Barton, 2002). Poverty and well-being were a particular concern with children in Wales having the worst well-being in the UK and one in

four living in poor families (Akhtar, 2005; Wyn Siencyn and Thomas, 2007). In Wales a new approach to education was seen to be the route out of poverty (Davidson, 2010).

During the conceptualization of the Foundation Phase, ministers observed curriculum models, which have influenced educational practice and approaches internationally (Brock, 2009). As the incumbent Minister for Education observed, “children were planning into the delivery of their learning outcomes and able to be very self sufficient.... really busy in the most positive way no boredom always thinking and always being sparked off others... I thought well that’s what we’ve got to have here, so in a sense that’s what the Foundation Phase was born out of” (M1). Welsh government documentation also positions the approach firmly in the open curricula traditions of other countries. ‘Practice in Denmark, Germany, *Te Whāriki*, in New Zealand and *Reggio Emilia* in Italy shows how children can be encouraged to make decisions about their learning, to be independent and physically active in doing so’ (WAG, 2003:10). In particular the *High-Scope* approach designed specifically to improve intellectual performance for children in disadvantaged inner city areas in the United States which has shown that ‘good preschool programmes for poor children have lasting effects’ (Brock, 2009; Schweinhart, 2013). This resonates strongly with the government’s aim to tackle poverty in Wales as identified in the interview with the Minister for Education who stated that, “there is a strategic direction and it is very clear that the education system in Wales is going to actively address issues around under performance around issues related to socioeconomic issues” (M1).

High-Scope along with *Reggio Emilia*, and *Te Whāriki*, is an open curricular approach and as such emphasises active participatory learning, interaction, reasoning, reflection and responsibility for self-learning (Anning and Edwards, 1999; Epstein, 2013). These approaches see children as active learners and participants in their own socialization and knowledge building (Rinaldi, 1998), ‘rich in potential, strong, powerful and competent’ (Malaguzzi, 1993:10). Practitioners are seen as partners in

this learning process (Maynard *et al.*, 2011) and their role includes the ability to ‘set up situations, and make choices that facilitate the work of children’ (Malaguzzi, 1998:91). The Foundation Phase curriculum reflects these approaches having personal and social development, well-being and cultural diversity at its core (Maynard, 2007). Government documentation advocates an approach where ‘children learn through first-hand experiential activities with the serious business of ‘play’ providing the vehicle’ (DCELLS, 2008a:4), in effect a play-based curriculum. Local authority support highlights this as emphasised in a phase one interview with the Foundation Phase Advisor who stated, “all learning must have a context that the children understand. Children must be able to access the curriculum at their level so all the resources in the classroom must reflect the range and ability of the children in the classroom” (LA 1). Teachers also explained how in this approach “children learn through experience” (T7, 47) needing “to feel touch explore.”(T8, 26). Recognition of children’s own responsibility in the learning was emphasised, as pupils were able to “decide for themselves what they will need in terms of resources.”(T1, 207), and the pupil centered nature of the approach allowed teachers the “freedom to go with the children’s interest” (T5, 48). The data from the documentary analysis, interviews with the advisory service and teachers from both schools identified that the Foundation Phase has many of the features of the open curricula that were influential in its conception. As such this research identifies one of the key features of the Foundation Phase as play-based active learning.

The influences from Scandinavia see increased use of the outdoors as an integral part of children’s learning. Mosser and Martinsen (2010:459) argue that a ‘kindergarten’s outdoor space is essential when it comes to children’s social development’. Studies in Norway reveal how distinct differences in outdoor environments may influence physical activity and play as well as concentration and physical health (Bjørklid 2005; Fjørtoft 2001; Grahn *et al.*, 1997). Drawing on such research, the Foundation Phase “places great importance on practitioners using the outdoors as another classroom where children can work on a daily basis” (M1). Outdoor learning is integral to the curriculum in each of the seven areas of learning

with activities organised in both the indoor and outdoor learning environments (Waller, 2007). This emphasis on the outdoors has been evident in the Foundation Phase documentation from its conception, with a requirement to view the outdoors as a holistic part of the day-to-day environment where all aspects of the curriculum can be experienced (ACCAC, 2004). Consequently the Foundation Phase framework requires the outdoor environment to be viewed as a resource for children's learning and whilst both indoors and outdoors children should be given opportunities to "take risks" and "become confident explorers" (DCELLS, 2008a:16). According to the former Minister for Education, this focus on the learning environment aims to promote discovery and independence, with a "balance between the cognitive development of the child and its emotional/social development...exploiting the creative potential of play and child-centered activities" (M1). Guidance from the local authority advocates children being outside and more actively involved in their learning with "a greater emphasis on practical activities rather than worksheets, outdoor learning, involving a range of adults not just teachers (creates) a situation (where we) aim for the children to speak more than the teacher"(LA 1). What is clear from this analysis is that the use of the outdoors is a second key feature of the Foundation Phase curriculum.

A third key feature of the Foundation Phase is a balance between planned 'practitioner-directed' activities (DCELLS 2008d) and 'child-initiated' activities that are developed from children's interests and play (DCELLS 2008a). However, as highlighted by Maynard (2013:283) and further discussed in chapter two, 'activities that are 'initiated' by the teacher may be 'directed' by the child and vice versa.' The recognition of the child as a co-constructor in their own learning is an important feature of other open curricula. This holistic approach to learning has development of children's self-image and feelings of self-worth and self-esteem at its core where a balance between structured learning through child-initiated activities and those directed by practitioners enables children to be creatively involved in their own learning (DCELLS, 2008a). In essence the Foundation Phase is "a curriculum that involves children in planning and reviewing their work and offers a broad range of

experiences (in order to have) a positive long term effect on children’s social and intellectual development” (Davidson, 2010:5). As can be seen from her speech to the sixth annual BESA conference the Education Minister highlighted how this new curriculum aimed to nurture lifelong learners, stating that:

A key strength of the Foundation Phase is that it is a curriculum based on play, active and experiential learning that is child-centered, broad, holistic and relevant. A curriculum phase of education that offers well-planned, practical activities that challenge and motivate, that develop curiosity and independence, and unlock creativity and a thirst for learning (Davidson, 2010:13).

Therefore, through analysis of playful pedagogies and international best practice, curriculum documentation and practitioner interviews, several key features of the Foundation Phase can be identified. These features are also evident through analysis of interviews and speeches at ministerial, advisory and school level. The recurrence of these features in the primary data suggests they are fundamental to Foundation Phase pedagogy. Indeed, and most pointedly, it could be said that without them any curriculum that is implemented in Wales cannot truly be considered to be a Foundation Phase curriculum.

These four key features are identified as;

- Play-based active learning
- Focused adult-led sessions
- Child-initiated learning
- Use of the outdoors for learning.

From the underpinning philosophy of the Foundation Phase the aim of the curriculum is identified as:

- Developing independent, motivated, active learners.

Although the aim and features of the curriculum have been identified, it is how this translates into classroom practice that is important. As discussed in Chapter 2 the process of educational change is highly complex, and the literature highlights that there will be ‘gaps’ between what was intended by policy developers and what

ultimately translates into practice (Ennis, 2013; Fullan, 2003; MacLean *et al.*, 2013; Sparkes, 1990; Supovitz, 2008). It is here in the enactment of the curriculum in the 'secondary context' that the role of the teacher is crucial (Ball, McGuire and Braun, 2012; Bernstein, 1990; Kirk and Macdonald, 2001). The four key features identified as fundamental to the Foundation Phase will need to be evident in school and classroom practice if the implementation is faithful to the aims and values of policy makers. Evidence of these key features will be explored in phase two of the research to ascertain the fidelity of the implementation of the Foundation Phase in the two schools.

4.3 Teachers as agents of change

Since this is a framework and less prescriptive than many other curricula, teachers and their interpretation of the documentation become even more crucial than might otherwise be. Therefore this third section explores the role of classroom teachers in the interpretation and delivery of the curriculum highlighting the complex nature of curriculum change and how teachers are part of that complexity. The section links to literature that studies teacher resistance to change and in particular focuses on how the support given during the roll out of the curriculum combined with leadership in the schools ensured the reduction and removal of many barriers. This section explores the recognition by advisors and heads of classroom teachers' tacit knowledge when constructing the curriculum in the schools and how their professionalism was acknowledged in the freedom they were given when managing the delivery of the curriculum in their classes.

The complex nature of curriculum reform is widely accepted and the roles and situations of stakeholders are connected and interacting in dynamic ways (Ennis, 2013; Fullan, 1999; Kirk and Macdonald, 2001; Mason, 2008). As highlighted by Gross *et al.* (1971) and more recently by Ball, McGuire and Bruan (2012), successful enactment needs many factors in place; teachers to be clear about the reform and competent to perform it, there needs to be appropriate materials available, and organizational structures that are congruent with the innovation, staff need to be

motivated and have access to effective retraining experiences and feedback mechanisms. The administration and management structures must ensure the existence of these conditions. This support for the implementation was evident in both schools with resources identified and allocated from the outset as the Deputy Head from School B explained:

Well it was confusing for everybody. Any new documentation takes a while for you to get your head round it and it was such a march from the system that we had I mean I think the biggest thing probably for us was as to school to ensure that all the resources, both physical and human resources had been organised so that the system could work from the beginning..... We had to ensure the budget was there for staff to be able to organise their rooms in order to fulfill the pedagogy of what the Foundation Phase was about, getting these children being independent, having areas that they could access for specific things. That did take a lot of resourcing but we did prioritise it (DH1).

The schools had support from the Local Education Authorities (LEAs) to develop the Foundation Phase approach in the way that best suited them, as the advisor noted “it became very apparent as we went out into schools, in the way people worked together, the resources that were available the preconceived ideas, every school was different. We are not a homogenous group” (LA1). The head of School A also highlighted how the whole school was involved in identifying what resources would be needed stating:

All the staff have been part of that process the curriculum coordinators have been into the Foundation Phase documentation and planned for that provision.....we have had training days on that, for example the person for geography has been into the Foundation Phase and looked at how it progresses into KS2 and the building

blocks that need to be there from Foundation Phase, so there's no separation they've worked as a team (H1).

This was supported by the approach at School B where as the Deputy Head explains:

It was a whole school, then there were lots of small PLCs (professional learning communities) the foundation group worked together but everybody came on board that would eventually be within the phase. And it was initially...people wanted to know they were doing it right so they wanted reassurance from the authority that this was the system so in fairness there was a lot of training from the authority and then all those ideas were brought back and then people tweaked them to suit them. (DH1)

MacLean *et al.* (2013) identified how teachers were worried about changes in curriculum highlighting their need for clear guidance and support. Teachers in this research also expressed concerns, with one explaining, "I was worried about it I was worried what changes it was going to be..... but I think it works much better now" (T1). The teacher in School A also commented in the interview at T2 "when I first started it worried me how do I do it" (ITA). Staff were positive about the training they received, which resulted in high levels of enthusiasm, as others commented, "I really liked the training and I was really enthusiastic about coming back to school and having a go" (T5), "I thought it was going to be wonderful and I was excited to be part of it really" (T7). Gross *et al.* (1971) identified motivation of staff as important for successful implementation. It would appear from the data that the considerable training from the government and LEA to support the role out of the Foundation Phase ensured teachers were not only motivated but were also clear about the innovation as highlighted in the Pilot interview:

Well it was three phases to it really; all teachers in the Foundation Phase have followed the Welsh Assembly route of modules one to six.

Each module looked at a different aspect within the Foundation Phase, one looked at documentation, one at observation, one at assessment and planning so it was quite structured (PI 1)

The modules were also delivered over time, as ongoing professional development, which Fullan and Pomfret (1977:373) identify as 'an important strategy for implementation.' A well-structured professional development programme supported the roll out of the Foundation Phase, as was highlighted by a head teacher in phase one interview data, explaining that teachers "benefited a lot from it because they weren't all on the same day, they didn't follow each other. Module one would have been maybe in October, then module two not 'til the beginning of November so they were staggered and you could implement some of the things you were taught on the course during that time." (PI). These professional development courses were staggered over time and they were also in different formats and venues. The class teacher in school B explained the support she had received to implement the Foundation Phase. "Last year when I was in reception I went on three courses, the Introducing the Foundation Phase in Pembrokeshire for reception classes, and then I went on a Foundation Phase conference for Wales which was in Aberafon, and then this year I've been on two Foundation Phase courses in Pembrokeshire on the introduction into year two" (T2).

Fullan (2008) points out that although prescriptive models get better initial results in terms of implementation, Datnow *et al.* (2000:232) found that 'transplanted reforms' did not last. Pertinent here for the Foundation Phase, which is a curriculum with lower levels of prescription, is the aim not just to 'establish large scale reform but to sustain it' (Fullan, 2000:20). Guidance on the implementation of the Foundation Phase stresses that 'schools are free to organize and deliver the curriculum in the way that best suits their circumstances and needs' (DCELLS, 2008b:7). Therefore, as discussed in Chapter 2, high quality support and materials are needed to support schools to build capacity from within (Fullan, 2000). This is an important aspect in terms of the schools successfully implementing change,

'Local context (readiness to learn, local capacity, etc.) is a crucial variable' (Fullan, 1999:21) and successful organizations tap into the 'values, meanings, day to day skills, knowledge and experiences of all its members' (Fullan, 1999:16). Experience of working in a unique context develops a deep tacit knowledge, described by Nonaka and Takeuchi (1995:8) as 'deeply rooted in an individual's action and experience, as well as in the ideals, values, or emotions that he or she embraces.' This type of knowledge is important for development from within the school and community as Leonard (1995:51) explains, you can't hire knowledge of a specific context 'you must grow it.' As such professional development cannot be isolated from the school environment (Jess, Keay and Carse, 2014) thus ensuring that capacity within schools grow. However teachers need to remain aware of the values and principles of policy and increase their capacity to create curricula that authentically captures the essence of policy intentions and in light of educational policy 'moving from a prescriptive model of a curriculum to a model that draws on professional capacity to translate and adapt a curriculum, it is crucial that policy intentions, aims and values are not lost in the process' (MacLean *et al.*, 2013:16).

It is clear from the interviews with the teachers that they felt that they had freedom to follow the interests of the pupils and their tacit knowledge was valued by heads. What is also clear from their comments is the low level of prescription in the implementation of the Foundation Phase that allowed them to 'devise strategies, make or adapt the curriculum, consider classroom tactics, learn from students' work and their own,' (Cohen, 1998:445), which are features of 'exemplary teachers' (Cohen, 1998:445). The teachers had a high degree of control over what was delivered to the children and how this was delivered. Initially they were uneasy with the newfound freedom and low level of prescription. However with the experience of delivering Foundation Phase since 2008 their confidence had grown and they relished that freedom to respond to children's interests. By the time this research was conducted it was apparent that they were valuing the autonomy in the classroom. The class teacher in School A explained how this confidence was still developing:

I've been teaching Foundation Phase a bit longer because when I very first taught I would follow numeracy strategy and I look back now and think oh that was terrible, but I think I now have that inner confidence of being able to take control and knowing if I want to do something we cannot, worrying about what I should be doing and somebody is going to breath over my shoulder about, I think my own confidence from having taught for longer but also I do love the way Foundation Phase allows the children to become involved, and in the inspection they did pick up on that, they did really appreciate that we were a child centered school, and that's becoming more and more apparent. They are lovely children and do get so enthusiastic and in a way they feed each other then, their enthusiasm leads to your own and you feed off that together (TA).

The teacher in School B also highlighted an increase in confidence to direct learning in response to the children. She highlighted how "there is that flexibility to just go out and do something and they are really enjoying it so I just carry it on into the next session and they do enjoy, and if I see them enjoying something I do run with itso if they have asked specifically to learn about something and I can link that in they really really enjoy that" (TB).

By having less prescription the onus moves to the teachers in the context of the school and thus draws on their tacit knowledge as part of the implementation. Although there is recognition that teachers need ownership of an innovation (Fullan, 2000), Kirk and Macdonald (2001) found that even when teachers were involved in the recontextualizing field they were unable to see beyond their own local context and so this limited their contribution to the process. Although in the case of the Foundation Phase teachers are not strictly involved in the process of writing curriculum documents and materials, with the reduced prescription of the framework it could be argued that teachers do construct the ideas in the context of

the school (Kirk and Macdonald, 2001). Therefore with only very loose guidance in the documentation, the training and materials that support teachers in the implementation of the Foundation Phase is crucial in ensuring fidelity to the policy intentions and aims. If, as Kirk and Macdonald (2001:6) suggest, ‘teachers are to be partners in the reform process and to have ownership of reforms, it may be important that they have opportunities to be agents within the recontextualizing field, involved in the production of instructional discourse, as well as agents in the secondary field charged with receiving and delivering instructional discourse.’ This involvement of teachers in the recontextualizing field may not only aid the implementation, but also help to sustain it.

As highlighted in Chapter 2, MacLean *et al.* (2013) found that for ‘teachers acting as agents of change, mediating flexible policy frameworks’ was problematic and confusing. This raised concerns of similar issues for the Foundation Phase, with its reduced prescription in the guidance. Therefore in order to ascertain if the curriculum is being enacted faithfully to the policy intentions, aims and values, the way that the teachers are interpreting and making sense of the Foundation Phase is crucial. In order to assess whether the curriculum is successful, teachers need to be able to articulate what they think children will actually learn in the Foundation Phase and thus construct learning outcomes based on their understanding of the Foundation Phase. This study is concerned in particular with the contribution of the Foundation Phase to children’s physical literacy, in light of the removal of Physical Education as a subject (as highlighted in the introduction and chapter 2). Therefore learning outcomes for the Foundation Phase in relation to physical literacy need to be identified through analysis of primary data from phase one.

4.4 The identification of learning outcomes

Semi-structured interviews were used to ascertain teachers’ views relating to the conceptualization of the Foundation Phase, its implementation and the outcomes of this implementation. Units of meaning relevant to the research question were identified from the interview transcripts in order to identify learning outcomes in

relation to physical literacy, as discussed in Chapter 3 (See Appendix I). Examples of units of meaning are shown in Table 5.

Table 5: Units of relevant meaning

| Teacher | Units of meaning |
|------------|---|
| Teacher 1. | Throwing and catching.87 Hitting a ball. 87 Dribbling with a ball. 87 Be able to thread small beads and the Lego. 97 Pencil skills.105 Use scissors well.105 Constructions, small Lego, small connect.106 Jump hop skip, be able to climb. 107. They are far more independent. 203 They decide for themselves what they need in terms of resources.207 They do challenge a lot, not in an aggressive way or rude way but they will say 'I think we should do it this way' or ' I think it's this'. 210 They are not frightened to have a go. 211 They are taking control of what they need to do. 222 |
| Teacher 9 | More independent.18 Proactive in their learning.18 They will be more active. 49 They will have daily outdoor time. 49 Doing lots of subjects outdoors not just PE. 50 To be independent. 57 Access equipment and ideas independently. 57 Work in pairs and groups. 58 Decide how they are going to learn things and how they are going to present it.58 Co-ordination 66 Balancing and travelling, running.67 |

These units of relevant meaning were clustered together where they appeared to share a similar meaning, and from these broader themes were identified (as explained in Chapter 3). These themes can be seen in Table 6.

Table 6: Themes, samples of units of meaning and number of units per theme

(See Appendix I (i) for full list)

| Theme and samples of units of meaning | No. of units of meaning |
|---|-------------------------|
| <p>Gross & fine Motor development Throwing and catching, hitting a ball, dribbling with a ball. 11(87) Run confidently 11(106) Jump hop skip be able to climb 11(107) Construction, small Lego, small connect 11(106) To have good fine motor skills. 12(78) To be able to hold a pencil. 12(79)</p> | 92 |
| <p>Use of the outdoors We've done treasure hunts, orienteering we've used the racecourse. 11(166) There's long grass, lots of mowed areas. 11(174) If they choose they could work outside. 12(23) Indoors and outdoors are blended. 12(24)</p> | 84 |
| <p>Independence / ownership of learning They are far more independent. 11(203) They decide for themselves what they will need in terms of resources. 11(207) They do challenge a lot, not in an aggressive way or rude way but they will say 'I think we should do it this way' or 'I think it's this'. 11(210) They are taking control of what they need to do. 11(222)</p> | 58 |
| <p>Confidence & well-being They are not frightened to have a go. 11(211) Climb and swing with confidence. 12 (87) To have the confidence to have a go at anything. 12(110) Children are allowed to express their feelings and views. 12(22) I look at their well-being. 12(159)</p> | 50 |
| <p>Physical activity (less sedentary) There is a huge emphasis to be physical and active in the indoor and outdoor environment, especially the outdoors, they haven't got a choice they have to be physically active. 12(120) One group could be doing maths where they are doing jumps, or we did skittles the other day, another group are outside playing skittles, adding numbers in their head. 14(175) We do language they are acting out the story outside on the stage so they're moving about. 14(180)</p> | 31 |

| Theme and samples of units of meaning | No. of units of meaning |
|--|-------------------------|
| <p>Cooperation</p> <p>They can take turns better. 14(185)</p> <p>Cooperation, being able to cooperate, they do all these things better because we've allowed them to take control of their own learning. 14(202)</p> <p>Sharing and collaborative talk waiting your turn and PSE. 16(85)</p> <p>Can work in small and big groups. 17(125)</p> | 23 |
| <p>Motivation.</p> <p>Children are far more engaged. 15(130)</p> <p>Excited about learning. 21(26)</p> <p>To get children more enthused to what their actually doing. 13(55)</p> <p>They are much more self-motivated much more independent H1</p> | 12 |
| <p>Play</p> <p>Children see it as playing, but the resources you put their guide them towards the learning. 16(56)</p> <p>Needs to be purpose to the playing. 16(60)</p> <p>Experiential learning through play. 17(28)</p> <p>Skills are repeated through their play. 17(48)</p> <p>All activities are planned with play in mind. 17(49)</p> | 16 |
| <p>Spatial awareness</p> <p>Spatial awareness, they're much more confident at finding a space by themselves. 14(108)</p> <p>Jump land coordinate spatial awareness and hand eye coordination. 17(126)</p> <p>Allows them to understand their space in the world. 18(25)</p> <p>To have an awareness of space. 13(105)</p> | 11 |
| <p>Experiential</p> <p>It's not just listening they should experience everything. 11(38)</p> <p>Experiential learning though play. 17(28)</p> <p>Children learn through experience. 17(47)</p> <p>They need to feel touch explore. 18(26)</p> | 10 |

| Theme and samples of units of meaning | No. of units of meaning |
|--|-------------------------|
| <p>Lack of prescription.</p> <p>Yes because you've got no constraints. 11(135)</p> <p>Freedom to cover the skills in whatever way you like. 15(46)</p> <p>Freedom to go with the children's interest. 15(48)</p> <p>Really flexible. 18(49)</p> <p>It is planned but has to be flexible as well. 20(49)</p> | 10 |
| <p>Safety.</p> <p>Rough idea of when things are safe or not. 16(150)</p> <p>Being safe. 18(76)</p> | 4 |
| <p>Miscellaneous</p> <p>Making good judgments about whether the child has gained the skill. 17(51)</p> <p>Prepositional language, storytelling.18(74)</p> <p>Creative movement to music. 18(74)</p> | 28 |

Analysis of documentation, interviews with the minister, advisors, head teacher and deputy head, were combined with the themes (table 6) from interviews with teachers in order to identify outcomes for the Foundation Phase in relation to physical literacy.

A clear theme in the curriculum document and its guidance for implementation was that the Foundation Phase should “promote discovery and independence” (DCELLS 2008a:4), enabling learners to “think for themselves and take greater responsibility for their own learning” (DCELLS 2008b:15). This was supported by the advisory service, stating that there was an expectation that the Foundation Phase would produce “a child who can make choices not just about the resources and equipment they are going to use, but about the way they learn best, children who are able to articulate how they learn best..... we will see children who are becoming increasingly literate and numerate” (LA 1). Teachers from the two schools felt “They (the children) are far more independent” (T1, 203), “They decide for themselves

what they will need in terms of resources” (T1, 207) and “They are a lot more independent than they were before Foundation Phase” (T4, 203). Interviews with The head teacher of school A and the deputy head teacher of school B also highlighted “independence within schools that I don’t think children in the past have had, and that’s a huge difference....such as the questioning skills, the more independent work” (H1). “These children are used to taking ownership of deciding perhaps which way they are going to record their work, and reflecting and saying well next time and I am going to do this” (DH1). This suggests a learning outcome in which ***children are independent learners who manage their own learning.***

Analysis of documentation also emphasised the need for “collaborative learning where learners learn from each other in pairs and small groups” (DCELLS, 2008b:14) “solve problems, and make decisions individually, in small and in large groups.” (DCELLS, 2008a:4). The teachers in particular highlighted improved social skills resulting in children who “are relaxed with one another” (T2, 175). “They can take turns better“(T4, 185) developing “Skills from paired work, negotiation” (21,91). The deputy head teacher and head teacher also note how “These children are used to working in groups sharing and taking turns, it happens every single day” (DH1) “(they are) co-operative, inquisitive, literate, numerate”(H1). A second outcome can be identified from this as ***children who are cooperative learners.***

Documentation also highlights the play-based nature of the curriculum with “play providing the vehicle for children’s learning” (DCELLS, 2008a:4). Movement is identified as prominent in the Foundation Phase. “Children should develop their gross and fine motor skills, physical control, mobility and an awareness of space” (DCELLS, 2008a:35). The teachers identified the Foundation Phase as “a curriculum full of movement” (T8, 101) where the children “are using their physical skills more every day especially their gross motor“ (T3, 159), “they are able to co-ordinate throwing kicking that sort of thing” (T3, 106). Staff also identified how pupils had “good fine motor skill” (T7, 124) “manipulating small apparatus” (T8, 73) and “able to hold a pencil” (T2, 79). The Foundation Phase Advisor commented on how

children were developing confidence through their physicality stating that “children are confident about making choices about what they want to do what they can do with their body, what they can expect their bodies to do, they are far more confident and more willing to have a go” (LA 1). This analysis suggests a third outcome for the Foundation Phase is that ***children have good gross and fine motor skills.***

The Foundation Phase documentation also stresses how, “an appropriate curriculum takes account of children’s developmental needs ensuring they grow to become confident learners” (DCELLS, 2008a:5). This being the case, “good Foundation Phase practice will enable learners to develop increased self-confidence” (DCELLS, 2008b:15). The Minister supported this stating that “the Foundation Phase has created much greater physical confidence” (M1), and teachers commented, on pupils’ approach to all aspects of learning, highlighting how children “have the confidence to have a go at anything” (T2, 110) “...knowing it’s not a bad thing to get it wrong” (T2, 110). Teachers felt that the pupils were “well-rounded children” (T7, 124) able to “express their feelings” (T8, 100), in summary supporting the aspirations of the documentation staff expressed the belief that pupils “are confident and independent” (T5, 116) and “ready to learn” (T2, 176). As such an outcome was identified as ***children who are confident and can express themselves.***

A further emphasis evident in the Foundation Phase documentation is that ‘enthusiasm and energy for movement should continually be promoted’ (DCELLS, 2008a:35). The deputy head teacher of school B felt this was evident and that there was “hugely increased physicality” (DH1), as did the teachers commenting that “there is a huge emphasis to be physical and active in the indoor and outdoor environment, especially the outdoors, they haven’t got a choice they have to be physically active” (T2, 120), “they are just moving around a lot more, not sitting at a table all the time” (T3, 160). The Foundation Phase advisor highlighted how this approach was “encouraging children from day one to move around the room freely” (LA1) and teachers observed that the environment was “more sensory than before

so more active” (T6, 104) so “we don’t often find them sitting down” (T5, 126), it “includes a lot of movement” (T8, 24). This suggests an outcome of the Foundation Phase is that ***children are more physically active.***

A final key aspect of the Foundation Phase documentation was identified as the use of “indoor and outdoor environments that are fun, exciting, stimulating and safe (to) promote children’s development and natural curiosity to explore” (DCELLS, 2008a: 4). This was emphasised by the minister who stated that as an approach “we place great importance on practitioners using the outdoors as another classroom” (Davidson 2010). Teachers described how “the classroom doors are always open” (T2, 143) and how they “try to make sure we’re outside as much as inside (T1, 156). Staff felt that “the outdoors is highly motivational” (T3, 53) with children “always in and out back and forth” (T2, 148). The head teacher of school A commented on the high levels of motivation and engagement noting that pupils “are much more self-motivated” (H1), staff also highlight this stating that “children are far more engaged” (T5, 130) “off doing different things” (T8, 47) “they have their own discoveries” (T5, 41). Pupils are “learners that want to learn” (T10, 26) and are “excited about learning” (T11, 26). A sixth and final outcome of the Foundation Phase was identified as ***children who are motivated and engaged in a variety of environments both indoors and outdoors.***

These initial outcomes were discussed with the teachers and through the process of respondent validation the six learning outcomes of the Foundation Phase from phase one of the research were confirmed as:

1. Children have independent learning skills and are able to manage their own learning
2. Children are cooperative learners
3. Children have good gross and fine motor skills
4. The children are confident and can express themselves
5. Children are more physically active

6. Children are motivated and engaged in a variety of environments both indoors and outdoors

In a curriculum where there is no 'subject' of Physical Education, this study aimed to assess the contribution of the Foundation Phase to children's physical literacy. As identified in Chapter 3 the two schools in the study differed considerably in terms of demography and location and therefore in order to ascertain the contribution of the Foundation Phase to children's physical literacy in the two schools, a manageable system of data generation was required. Appropriate assessment tools were needed that would measure the achievement of the learning outcomes. In order to achieve this, the six learning outcomes identified through respondent validation were combined in relation to attributes of physical literacy so that methods for data generation could be identified as discussed in Chapter 3.

4.5 The relationship of the learning outcomes to physical literacy

This final section explains how the six learning outcomes were grouped together in order to identify tools for data generation and assess the contribution of the Foundation Phase to children's physical literacy.

As highlighted in the first section of this chapter, the traditional subject of Physical Education no longer exists in the Foundation Phase. This raised concerns about how children were experiencing the wider learning and benefits associated with Physical Education as discussed in Chapter 2, and how (as also discussed in Chapter 2) children were achieving one of the fundamental aims of Physical Education, that of developing physical literacy. The analysis of the learning outcomes identified similar aspects that enabled them to be paired and related to attributes of physical literacy (see Table 7) and as such identify assessment tools for each category.

Table 7: Pairs of learning outcomes

| Outcomes | Attributes of physical literacy |
|---|---|
| Children have good gross and fine motor skills Children are more physically active | Physical competence and effective interaction with the environment. |
| Children have independent learning skills, and are able to manage their own learning The children are confident and can express themselves | Confidence |
| Children are cooperative learners Children are motivated and engaged in a variety of environments both indoors and outdoors | Motivation Effective interaction with the environment. |

These three pairs of learning outcomes align closely with the physical literacy attributes of physical competence and effective interaction with the environment, motivation and confidence. Whitehead (2010) describes these as “the three attributes that form the kernel of the concept” (p14) and identifies the importance of motivation and confidence for learners in “realizing their embodied capability” (Whitehead, 2013:41). The Minister also highlighted the links to physical literacy stating:

On physical literacy, it just seemed to me as someone who has taught both drama and PE which are both different expressions of physical literacy, that what the Foundation Phase has created is much greater physical confidence and that is an immensely important outcome and needs to be encouraged further up the school system (M1).

The links to physical literacy are also evident in the aim of the Foundation Phase, identified earlier in the chapter as **developing independent, motivated, active**

learners. The identification of these learning outcomes from the teachers' own interpretation of the Foundation Phase will enable this research to ascertain if the schools are achieving the aims of the Foundation Phase as identified by the staff that are enacting the curriculum (Ball, Maguire and Braun, 2012).

4.6 Conclusion

This chapter analysed the nature of the Foundation Phase, identifying how as a 'framework' there was less prescription and a degree of autonomy for schools and teachers in its implementation. Research question one asked 'What are the main learning outcomes of the Foundation Phase in relation to physical literacy and how are teachers interpreting these?' In answer to research question one this chapter explored the rationale for the new curriculum, drawing on data from documentary analysis and interviews and in so doing identified the aim of the Foundation Phase as **developing independent, motivated, active learners**. Learning outcomes were identified that related to the attributes of physical literacy of motivation, confidence, physical competence and effective interaction with the environment. By determining the underpinning philosophy and aims of the Foundation Phase, as constructed by policymakers, this chapter identified key aspects or features of the curriculum as **play-based active learning, focused adult-led sessions, child-initiated learning, and use of the outdoors for learning**. These key features are approaches and experiences that the policymakers specify as integral to the implementation of the Foundation Phase. The identification of these features as being integral to the Foundation Phase, allowed this study to uncover the factors that enabled teachers to enact policy in the context of the school. In so doing, this study was able to critique the extent to which there was congruence between the original vision of the Foundation Phase and practice in schools, in effect ascertaining the fidelity of the implementation and this is explored in Chapter 6. The identification of outcomes enabled the assessment of whether the reform had been successful by measuring pupils' learning. The contribution of the Foundation Phase to pupil's physical literacy in relation to the learning outcomes identified in this chapter will be explored further in Chapter 5.

Chapter 5 - The contribution of the Foundation Phase to children's physical literacy

The purpose of this chapter is to report findings from phase two and phase three of the research. It focuses on the learners, exploring the nature of the Foundation Phase in relation to their experiences and how this is contributing to their physical literacy and wider learning. This chapter seeks to answer research questions two, three and four which ask respectively, 'to what extent are the outcomes (as identified in phase one) being achieved?' 'What processes might be impacting on the achievement of the learning outcomes?' and 'How is the development of physical literacy related to children's wider learning across the Foundation Phase curriculum?' (research question three is also addressed in Chapter 6.)

This chapter analyses data related to children's physicality in the broader holistic context of play-based early years experiences and outdoor education. In so doing it locates the research not only in the field of curriculum change in Physical Education but also in the field of early years education, play theory, motor development theory and outdoor learning.

The chapter is organized into two parts. The first part creates a descriptive account of the Foundation Phase in order to give a sense of how the children were experiencing the curriculum. The descriptions are all drawn from data generated in both schools and recorded in field notes and video footage. The discussion highlights key aspects of the Foundation Phase and areas of particular interest and relevance for this study. The second part presents the main findings relating to children's progress of learning in relation to the six learning outcomes identified in Chapter 4.

5.1 A typical Foundation Phase day

This section describes several sessions from the two schools in the study. Although every day is different in the Foundation Phase, these examples are used to give a

picture of a typical day in the Foundation Phase. The sessions are examples which are drawn from field notes and video footage in both schools to highlight the range of the pupils' experiences and the different aspects of delivering the Foundation Phase (as described in the previous chapter). The first example describes a focused language literacy and communication lesson where the children were working in groups on tasks directed by the teacher. Following a brief description of the playtime, the second example describes a focused whole group physical development lesson. The third example is a more child-led lesson where there are examples of enhanced provision (see previous chapter) and also free choice play. Although the nature of a play-based curriculum means that every day is different, these types of activities and the structure of the sessions are typical of the way the Foundation Phase curriculum was interpreted in the schools in this study.

Example one School B – Focused provision, language literacy and

communication: *The children are calm as they come in for registration. They have hung up their coats and some give snack money to the Teaching Assistant at the back of the class. The day begins much like any infant class with registration and 'dinners'. Being the Foundation Phase bilingualism is important. The register is done in Welsh, today Elan (the teacher) asks how they are and if they are having sandwiches or school dinners, "Bore da" (good morning) says Tom, "Ga'i brechdanau" (can I have sandwiches), he speaks Welsh confidently, even though it is not his first language and like all the children in this school, he speaks no Welsh at home. Elan (the teacher) instructs the children to form a 'Cylch' (circle) following registration, and with some minimal fuss the class sit in a big circle on the carpet to practice a story... 'the adventures of Prince Henry'. Much as any shared story session, while Elan (the teacher) tells the story the children do actions with their arms, several of the children join in the story, others just listen and watch. Once they have worked on the story map as a class, they are split into their groups for literacy activities. It is at this point the day begins to look different from a Year 1 class. Turtles are doing tricky words outside; Jellyfish playing word games on the carpet, and Sharks playing word games at the tables. This approach to the learning looks at first glance more like a nursery/*

reception class. However the children collect the resources they need without any help from the adults and all head off to their activities. Although there is some noise and a lot of children moving about, the staff are not concerned and allow the children to sort themselves out, they are soon all on task. As a focused language and literacy session, this looks very different to a year one English lesson.

The Turtles are outside working in pairs. They have a selection of tricky words per pair. Around the edge of the playground are large blackboards on the walls. One of the children reads out a word while the other runs to one of the boards and tries to write the word on the board with chalk. Elin has collected chinks and tissues to clean the boards, which she gets on with doing, Ted and Lola come to help clean the boards, these are the three who will probably find the spelling most challenging and seem to be enjoying cleaning the boards! Ted and Elin fuss for a while they seem to be avoiding the task by cleaning the boards and Ted is lying on the raised stage area, after a while they do get on with the task and are able to write, 'little', 'down', 'like', 'what', 'by'. Elan (the teacher) comes out to check on them, she joins the game and makes a spelling mistake; the children really enjoy showing her how to correct her spelling. Tom and Sean work in a pair, they are running back and fore jumping onto a big tyre and logs in between their goes at spelling. No one shouts at them or hassles them to get on with the task, and between each run and jump they return to the task of writing the words on the board. Some of the children are playing the game exactly as they have been told, others are enjoying drawing with the chalk, Ted lies on top of the covered sandpit, Lola gets on with writing words without him. Ted says he is colouring to make a disco.

The 'Sharks' group sit round a table and Conrah holds up cards for them to read, if they read it correctly they keep it, Elan (the teacher) tells them the challenge is to see how many they can get. Meanwhile, the 'Jellyfish' group play on the floor in pairs, they spread the cards out on the floor and take it in turns to ask their partner to find a word for them, if they find it they can keep it. Rhys and Caryl play together on the carpet, Rhys sits cross-legged, Caryl lies on her tummy; between them are lots of 'oi' words. Caryl asks Rhys "can you find 'boiling'?" he looks and finds it "ah ha" he says

and picks it up placing it next to a word he has already found, Caryl finds 'voice' and puts it with her words. Next she asks Rhys to find 'noisy'. He repeats the word a few times to himself and looks at the words, he sees the word and brings his arm in like a crane to pick it up, keeping his legs crossed but tipping over on his side to grab the word he smiles at Caryl as he collects it, she laughs (seemingly amused by his crane impression) and straightens out a card he has bumped. At the end of the session the children tidy up and as at the start they do this independently. They all come to the carpet to review the session. They practice some sounds and Elan (the teacher) focuses on the 'oo' sound. Elin writes it on the board, with Elan (the teacher) helping her by scaffolding saying, 'there are 2 sounds that go together to make this sound'. The class then sings along to a CD the 'oo' song- 'who wants to be a cuckoo'. After the review time, it is playtime.

This first example illustrates how the area of Language Literacy and Communication is delivered as a focused approach. The teacher has planned the activities for the groups and the children are directed to their tasks. This in essence is the same as any language lesson for children in a year one class. However the session is notably different from many English Lessons in that once the children have been told what their group is doing they go and get on with the task, collecting resources they need and organizing themselves. Most striking is the nature of the tasks themselves. These are highly playful involving many of the cues Howard and McInnes (2010) identify that children use to make the distinction between work and play, such as fun, physicality, outside or on the floor and under the child's control. Although as shown in this example the focus of the learning is the spelling of high frequency words, the children are playing games to achieve this, highlighting the play-based nature of the Foundation Phase.

Play time School A - Free choice activities: *After their milk the children head out into the playground. They disappear off in all directions and some go to get equipment from a small storage shed to play with. Erin and Nia bounce on a balance ball, Tomos plays football with Chris. Stuart, Peter and Cai run round chasing each other. Zack has*

a rugby ball and Chris plays on a wheelie tray. Osian runs round; Owain runs near to the rebound net and looks as if he would like to play on it. Dai is chasing and falls; Cai, Jo and others are there. He gets up and seems ok he speaks to a teacher and then carries on running with the rugby ball. Tomos is running dribbling a football around the yard. Playtime is a very busy time!

Of particular note in this playtime session is the high level of activity that is taking place. Although a playtime in primary school would be a time of children having opportunities to be active and as such this would not be considered unusual, it is the range of activities that is most striking. Football does not dominate the playground to the exclusion of other activities. The school has designed the grounds specifically to encourage diverse opportunities for active play with zoning, playground markings, trim trail, willow planting and uneven surfaces, as well as a huge selection of playground equipment which is selected by the pupils and available every playtime from a shed that the pupils freely access.

Example two, School B - focused provision, physical development: A key feature of the Foundation Phase is that even though there is child-initiated learning, focused adult-led lessons still take place. As shown in the language session previously these may be group activities, but this is not always the case and whole class lessons still remain, particularly for physical development where the children work in the school hall or out in the yard. These areas of the curriculum remain timetabled for classes. Typically these involve the children using stories and themes from their work in class for developing movement vocabulary.

Elan (the teacher) recaps the last creative movement session and Johnny says creative movement is "trying to describe something with our bodies by our movement". The music plays and the children tell Elan (the teacher) what it makes them think of..." drums", "cowboys and horses", "Indiana Jones", "Trumpets", "A parade" ...it is the theme for Indiana Jones. Elan (the teacher) explains they will be going on an adventure around the countryside. Different areas are labeled on mats in the hall, bog, tunnel,

river and monsters cave. The children have to think of an appropriate type of action for the area and respond to the task. Lola and Helen show swimming strokes from earlier in the week as they travel to warm up. Elan (the teacher) reminds the children to use different body parts for travelling. They play 'huggy bears' to get into groups and in their groups work in the areas for 'the adventure'. The children are generally using a variety of movements, Elan (the teacher) stops the music to ask children to show others their ideas, she reminds them about levels and different parts of the body. Tom starts to explore moving on his toes in a tuck shape, he is desperate for Elan (the teacher) to notice him and sulks because she hasn't. He is working really well, being thoughtful about how he moves. Helen gets picked to show how she uses her side to slide along. The children move to all the stations and practice moving in different ways in response to the area. At the end Elan (the teacher) picks Tom to be the last demonstration, she says she has chosen him because he has been very creative in all the places, he is going to show all of his adventure in each station. He travels, stamping big steps then two foot hops to travelling down low. He changes direction, levels and ways of moving. He is so pleased and has really demonstrated thought and body control. The children cool down in imaginary bubbles doing stretching and shapes. The children all manage putting shoes and socks on independently and line up to return to the class, where they do the action story 'we're going on a bear hunt' copying Elan (the teacher) for the actions.

This second example illustrates how whole class-taught sessions are still a part of the Foundation Phase, important particularly to this study as free play alone is not sufficient for children to realise the full potential of their movement vocabulary (Maude, 2010). As progression to the mature stage of a fundamental movement pattern depends on a variety of factors, the environment, the child's maturation, and the conditions within the task (Gallahue and Ozmun, 2002; Pickup and Price, 2007) if children are to make progress in the development of a movement vocabulary and mastery of skills then they need stimuli for extending movement ideas and good teacher intervention for ensuring refinement of this movement. In this example Elan (the teacher) extended the pupils' movement vocabulary by encouraging them to

explore new ways of travelling and to think about how they varied the movements. The highly physical environment illustrated in the play time allows children opportunities to practice and consolidate movements they have explored and developed in the teacher-led physical development sessions.

Example three, School A - enhanced provision: Some learning in Foundation Phase is in the enhanced provision, where the teacher will have challenges and tasks for pupils to choose that further develop themes and topics and consolidate concepts.

The activities for the day are already written on the board, there are 10 to choose from.

- 1. Creatures and people with stones*
- 2. Add to big stone prints*
- 3. ipads*
- 4. Music with stones*
- 5. Weighing with stones*
- 6. Describing stones*
- 7. Computer place value*
- 8. Gym (stepping machines in the role play area)*
- 9. Magnifying glass and stones*
- 10. Evaluate Eric the hero.*

One focused task group works with the teacher, writing recipes for stone soup. They sit around a small table together with Sue (the teacher). They are all discussing their recipes and writing them out onto prepared recipe sheets. Sue focuses on sentence structure, spelling and letter formation (see Appendix J for example of writing). Once the children are clear about the activities, those that are not in the focused writing group head off to the tasks which they have chosen to do. The children are able to move between activities once they have finished, they do not go to ask an adult, they move freely. Stuart and Aled go to do the stone printing, they get the equipment out by

themselves and get straight on with the activity. Zack finishes his writing and is very pleased, he says he is going to look at stones next and stops to chat to Aled on the way, nobody challenges him about what he is doing and why he is talking to Aled. Children talk whilst getting on with their chosen activity, they select tasks, moving to join others and work with them if the activity interests them. Osian has moved to work with Tom and Chris looking at stones, they sit on the floor chatting about the stones. Katy joins them as do Stuart and Aled. They get stones and look at them, show each other and discuss what they see, "who wants to look at this?" asks Katy. After a while Tom and Aled move to weighing stones. They organise all the equipment themselves whilst Katy and Nia go to the 'gym' to play on the 'steppers'. Before long the teacher gives a five minute warning to tidying up time. They put all the equipment away, scissors and glue back in trays, weighing scales away.

Once the classroom is tidy the children have a story with props and puppets, which they join in. The topic they are following has been stimulated from a visit to the local beach where they had eight activities linked to music art and storytelling. The beach has a huge pebble section, and the work following this has linked stories and stones. After the story Sue (the teacher) tells them we are all going outside, they have a free choice session and can choose any activities as long as they are linked to stones. There is one 'challenge' they can try if they want "can you make a stone float?"

Learning outside is an integral part of the Foundation Phase (DCELLS, 2008a) and as soon as the children are outside they are all busy. This approach to learning seems very unstructured and chaotic at first glance, but when observed closely it becomes apparent that children are engaged and all focused on their chosen games and activities. What is noticeably different from year one lessons is the autonomy of the pupils, the variety of activities and the high levels movement.

Several of the boys get started on making a long line of stones as part of a game; they collect them from big buckets of stones finding ones that are of a similar size. It seems as if the stones have been sorted previously and are stored according to size. Another

group of boys have chosen a tough spot (a large strong rubber circular tray for messy play) and are lining the inside of this with big stones. Several children are filling another tough spot with water to try the stone challenge, and the rest of the children are playing on the different hopscotch grids. Chris, Cai and Caitlin play a game of hopscotch, which is quite surprising as Chris and Cai have poor co-ordination. They throw the stone and jump on the numbers. Sue comes over to see what they are doing. She sees that they are struggling to play the game and explains that they have to jump over the square with the stone on. She helps them with the sequence of one foot to two feet to one foot jumping. They practice this and seem to have got the hang of it. Tom joins them and has a go followed by Erin. They then run over to another area where four hopscotch grids are drawn on the playground, each one making up a side of a square. Erin and Tom play on opposite games and practice playing with their stones. They both have mastered the game well and are able to throw the stones accurately onto the numbers and hop around and over the stones as necessary.

Nia walks over to Erin, she shows her a small white stone she has, they chat and Erin shows her where she has to throw the stone. They take it in turns to throw their stone onto a number, sharing the same grid. Meanwhile Tom has thrown his stone onto an adjoining grid. He develops the game, throwing the stone onto any of the four hopscotch grids and hopping and jumping to collect it. He continues to play this for a few goes and then picks up his stone and heads over to Peter, Aled and Jo who are building lines of stones on the playground. They chat for a while and they show him what they are doing, he joins them. Back on the original hopscotch area Cai and Chris are still practicing, they are soon joined by Tomos, who interestingly also has poor co-ordination. The boys take it in turns to play the hopscotch and, in between goes, chat. They are all struggling with the sequence of jumping and hopping, and Cai just does two-footed jumps across the grid. In between the goes they are throwing the stones further and Cai kicks out at Tomos. They continue playing then Chris kicks a stone. They play again. It looks as if this will turn into a fight, but surprisingly, Cai pushes Tomos who ignores the push and carries on with his game. Cai then wanders over to see what Peter and Jo's group are doing. Tomos and Chris continue playing hopscotch

and Chris manages to link the hop jump sequence for a short time, he seems pleased, he perseveres with playing for a while.

Cai looks as if he will mess up the other group's game, but instead he stands and watches what they are doing and then joins in. Chris in the meantime has thrown his stone out past the end of the hopscotch grid and runs to get it, he runs back, but not to the game, over to the traversing wall instead and begins to climb on this. After a couple of holds he jumps off and heads over to find something new to do.

Dai and Stuart are playing with another tough spot they have filled with different stones to make a landscape for small world play using dinosaurs. A group of girls have filled one of the tough pots with stones and water making a 'stone soup'. Stuart jumps up and down excitedly seeing the children playing on the 'challenge' have made a boat for a stone and it floats! Chris is back trying to hopscotch, he can't coordinate the jumps and hops, Sue (the teacher) goes to help him, he tries again and once more manages to do the right sequence, he is smiling. Peter and Cai play fight with toy characters, it looks as if it will get nasty but it doesn't, just in time Sue says it is time to tidy up.

This busy afternoon session demonstrates how children have different levels of choice in their learning. The first part of the afternoon is an example of enhanced provision, where the teacher has organised tasks and challenges for the pupils to select. These tasks are linked to previous learning experiences such as stories and recipes making 'stone soup' and are aimed at consolidating and extending the children's learning. These activities highlight how the children are given the freedom to move between tasks, and the space and time to complete them. Children are able to select which tasks they want to do. Again, as in the earlier examples, the children are responsible for collecting and organizing resources and putting them away independently. Noticeable in these sessions is the way teachers do not nag pupils to sit down and get on with their work, they accept that the children will be

moving around and talking to other pupils. In particular the children appear to be highly active and moving around freely throughout the lesson.

The rich, multilayered nature of the Foundation Phase, as highlighted above, meant that generating data about these varied experiences required many approaches. Therefore data was generated using a complementarity mixed-methods approach (as described in Chapter 3). The next section (b) of this chapter examines the data from the range of instruments and methods, which were used to explore in depth the contribution of this new approach to children's physical literacy.

5.2 The pupils' progress whilst in the Foundation Phase

The purpose of this part of the chapter is to present the findings from phases two and three of the research. The first section identifies three key findings. The subsequent three sections explore each of the findings through a detailed analysis of the data. This is reported and discussed in relation to the literature and existing research highlighted in Chapter 2.

The key findings from phase two are:

1. The Foundation Phase makes a positive contribution to the attributes of physical literacy.
2. The Foundation Phase is an inclusive learning environment for pupils with a range of needs.
3. There is a positive relationship between pupils' physical competence and pupils' intellectual development.

5.2.1 Key finding 1. The Foundation Phase makes a positive contribution to the attributes of physical literacy

Results from the data relating to this key finding are listed below grouped in relation to attributes of physical literacy.

Physical competence and interaction with the environment

- Pupils in the Foundation Phase had good levels of physical competence
- There was a significant improvement in children's locomotor skills.
- Object control skills did not improve significantly.
- Improvements in pupils' physical competence increased over time.
- Pupils' motor skills improved significantly between T2 and T3 as they moved from year one into the year two age-group.
- Levels of non-sedentary behaviours were high and similar in both schools, as was the amount of time using the outdoors.
- Pupils who had more access to natural environments had higher scores on the motor tests.

Motivation

- Pupils were motivated to move in a variety of contexts during all aspects of their learning.
- Pupils were highly engaged in their learning.
- Pupils learned through effective communication and high levels of collaboration.

Confidence

- Pupils' perception of their own physical competence improved significantly between T1 and T3.
- Pupils appeared to make accurate judgments about their physical competence.
- Pupils with lower levels of motor competence and perceived competence were still motivated to move and engage in learning.
- Pupils were confident to move in a variety of contexts during all aspects of their learning.
- Pupils were highly independent in their learning.

- Pupils were confident and enthusiastic and able to make judgments about their own learning and achievements.

These findings are developed in the following section in relation to the data generated from a range of research methods (outlined in Chapter 3).

5.2.1.1 Physical competence and interaction with the environment

Pupils in the Foundation Phase had good levels of physical competence.

Children significantly improved their Locomotor skills in the Foundation Phase across phase two of the study. However there were no significant improvements in object control skills. The improvement in motor competence increased over time with the significant improvement of pupils' motor skills between T2 and T3 as they moved from year one into the year two age-group.

Analysis of data generated through documentary analysis and interviews identified that the schools' interpretation of the Foundation Phase curriculum suggested pupils would have good levels of physical competence and be physically active (outlined in Chapter 4). For the purpose of this study physical competence was identified as motor development and was broken down into gross motor skills and fine motor skills and assessed with the TGMD-2 and BOT-2 (as described in chapter 3). The TGMD-2 was a measure of the children's fundamental motor skill proficiency whereas the BOT-2 was a more general measure of motor coordination. The mixture of quantitative and qualitative instruments (outlined in Chapter 3) was used to elaborate on findings thus enriching and developing understanding of phenomena (Greene *et al.*, 1989:258). The data is presented below.

Gross motor skills

The TGMD-2 was measured three times across phase two of the study at Time 1 (T1) in February, Time 2 (T2) in July and T3 (T3) in December (as outlined in

chapter 3). The TGMD-2 yields three scores, the Gross Motor Quotient (overall FMS); Locomotor subscale; and Object Control subscale. Children ($n=18$) were measured at each time frame. Overall analysis of the data from TGMD-2 showed significant improvements in the Gross Motor Quotient and Locomotor skills from T1 to T3, but no significant improvement in object control.

Table 8 shows the means and standard deviations of the GMQ, locomotor SS, and object control SS for the overall group and by School A and School B for T1, T2 and T3. School B has a higher standard deviation than School A.

Table 8: Means and standard deviations for T1, T2 and T3 of Gross Motor Quotient, Locomotor Standardised Score, Object Control Standardised Score, Locomotor percentile rank, Object Control percentile rank.

| Group N=18 | T1 | | T2 | | T3 | |
|-----------------------|-------|-------|--------|-------|--------|-------|
| | M | SD | M | SD | M | SD |
| Overall | | | | | | |
| GMQ | 91.83 | 9.08 | 94.33 | 9.02 | 103.83 | 12.30 |
| LocoSS | 8.33 | 1.85 | 9.00 | 1.50 | 11.22 | 2.53 |
| Loco% | 32.00 | 18.47 | 38.00 | 18.02 | 61.00 | 25.77 |
| OCSS | 8.94 | 1.89 | 9.06 | 2.13 | 10.11 | 1.91 |
| OC% | 38.50 | 20.47 | 40.06 | 23.14 | 50.33 | 21.51 |
| School A Rural | | | | | | |
| GMQ | 96.25 | 7.48 | 100.75 | 6.36 | 111.63 | 12.67 |
| LocoSS | 9.00 | 1.69 | 9.50 | 1.31 | 12.50 | 2.67 |
| Loco% | 38.25 | 19.98 | 43.50 | 16.59 | 73.38 | 25.22 |
| OCSS | 9.75 | 1.28 | 10.63 | 1.30 | 11.38 | 2.07 |
| OC% | 45.88 | 15.51 | 57.38 | 15.51 | 65.00 | 21.88 |
| School B Urban | | | | | | |
| GMQ | 88.30 | 8.99 | 89.20 | 7.51 | 97.60 | 7.97 |
| LocoSS | 7.80 | 1.87 | 8.60 | 1.58 | 10.20 | 1.99 |
| Loco% | 27.00 | 16.47 | 33.60 | 18.74 | 51.10 | 22.69 |
| OCSS | 8.30 | 2.11 | 7.80 | 1.81 | 9.10 | .99 |
| OC% | 32.60 | 21.14 | 26.20 | 18.55 | 38.60 | 12.56 |

The percentiles are included as a guide to the relative proficiency of children, however it should be noted that the percentile data were normed on a USA sample and it is not known how appropriate this sample is to Welsh children (there is no normed data in relation to Welsh children).

The mean percentile rank overall and for School A and School B revealed that children were typically developing and the average child did not have delays in

motor development (less than 25th percentile) in the mean percentile scores. Typically developing children are between 25th and 75th percentiles. Below the 25th percentile is delayed. Above the 75th percentile is advanced.

A repeated measures ANOVA was conducted across the three time frames of the study (T1, T2, T3) with a Bonferroni adjustment of the alpha level built into the analyses, in order to adjust for multiple comparisons that took place (overall data, School A, School B). If the main effect was significant then pairwise comparisons were conducted to examine at what time points there were significant differences. These comparisons were between T1 and T2, T2 and T3 and T1 and T3.

The repeated measures ANOVA was undertaken for the: 1) GMQ, 2) Locomotor SS, and 3) Object Control SS for the overall group, and broken out by School A and School B. The ANOVA with repeated measures for the GMQ revealed a significant multivariate main effect for Time, $F(2,16)=15.35, p<.001$, Eta squared .66. A similar finding was found for the ANOVA with repeated measures for Locomotor skills, $F(2,16)=24.17, p<.001$, Eta squared .75. However, for Object Control skills there was not a significant main effect, $F(2,16)=3.17, p=.069$, Eta squared .28.

Table 9 provides a summary of the findings of the pairwise comparison analyses with the significance level indicated when significant.

Table 9: Summary of the findings of the pairwise comparison analyses

| Overall | T1-T2 | T2-T3 | T1-T3 |
|-----------------|-------|-----------|----------|
| GMQ | NS | $p<.001$ | $p<.001$ |
| LOCOSS | NS | $p<.001$ | $p<.001$ |
| OCSS | NS | NS (.070) | NS |
| LOCO% | NS | $p<.001$ | $p<.001$ |
| OC% | NS | NS | NS |
| School A | | | |
| GMQ | NS | $p=.011$ | $p=.011$ |
| LOCOSS | NS | $p=.009$ | $p=.001$ |
| OCSS | NS | NS | NS |
| LOCO% | NS | $p=.009$ | $p=.002$ |
| OC% | NS | NS | NS |
| School B | | | |
| GMQ | NS | $p=.015$ | NS(.058) |
| LOCOSS | NS | $p=.032$ | $p=.005$ |
| OCSS | NS | NS | NS |
| LOCO% | NS | $p=.046$ | $p=.006$ |
| OC% | NS | NS | NS |

These findings identify that the significant improvement in the GMQ from T2 to T3 and from T1 to T3 is related to the significant improvement in Locomotor skills from T2 to T3 and T1 to T3. Object Control skills did not show a significant improvement. Although the research design does not allow for direct attribution, as pupils have only had experience of the Foundation Phase this data infers that as pupils are in the Foundation Phase their physical competence increases with time. In this study the significant increases came as pupils progressed from year one to year two age-group, which is the final year of the Foundation Phase. This suggests that the experiences of the Foundation Phase may be having a cumulative effect, or that pupils have reached a significant developmental milestone at this stage of the

curriculum. Data from qualitative methods was analysed to explore processes that may account for these findings from the TGMD-2.

Field notes and video footage from the schools support the quantitative data and highlight how children were developing their Locomotor skills in many aspects of their learning. A mathematical development session in School A showed how the pupils were developing their Locomotor skills whilst engaged in activities as part of a maths trail:

'After lunch is a maths trail- Easter egg maths trail, Mrs. Smith hides the questions outside around the grounds. Sue (the teacher) reviews issues that arose in the maths trail yesterday - she explains how to use Numecon and the number of tens in a number... A reminder about working well with a partner - stay with partner at ALL times so they can talk about the question and write it down. Using ALL the school grounds, on the field as well up to the football posts. Questions are written on egg-shape card for pupils to find. Use clipboards, find the question number and record the answer in the right place' (FNA 72, 15). 'Sarah and Ann have their clipboard and jog off to the steps to head up onto the grass. Jo and Cai have theirs and Jo points the way with his pencil "up here, up on the grass" he shouts, Cai has the clipboard under his arm and they run over to the wall and climb up with ease onto the grass. Peter and Dai run past, Peter up on the grass Dai below on the playground, "where did you see it?" shouts Dai, "up here" says Peter pointing up to the field, Dai heads up on the steps and they run across to the football posts near Jo and Cai. Soon the boys have joined forces and run all together down the hill towards the trim trail and willow tunnels. They climb and hurdle the trim trail, they are shouting and laughing and soon Dai has found another egg on the trim trail. The children run between cards and find the questions, climbing over and running around the parts of the trim trail' (V7A a, b, c). 'They play climbing and swinging for a while then the majority of the class head to 'the mound' and play a running and chasing game up and down' (V7A e).

What was noticeable in this session was that although the lesson had been planned as an activity for the mathematical development area of learning, the children were using Locomotor skills throughout. Not only did the activity of a trail (in essence an early form of orienteering) encourage the pupils to run, but the use of the natural terrain and the obstacles of the trim trail meant that children were running, climbing, leaping and jumping, demonstrating the types of activities that Fjortoft (2000) highlights improve motor development.

Data from field notes and video from Time T1 to Time T3 also identified times when pupils demonstrated activities that involved object control skills. During a free choice activity session in between T1 and T2, several of the children selected activities involving object control, *'Llion plays football, Megan plays with a hoop and target game. Iestyn is playing with a bat and ball whilst Elin is making a game with skittles a bean bag and ball'* (FNB 60, 14). The children played these activities independently with no intervention from the teacher. In School A the variety of equipment available at playtimes and lunchtimes throughout the year meant *'the range of activities is phenomenal - balance boards, hoops, wheelies, climbing wall, footballs, netballs, skipping in a variety of ways'* (FNA 99,16) however as the video shows (V8A) *'even though there is free choice and many bats and balls, only Peter, Tomos, Chris and Tom are playing with bats and balls, the rest are playing on space hoppers, skipping games, running and chasing games or football.'*

Children did have opportunities to practice throwing skills in many areas of the curriculum. In a mathematical development session learning tens and units in a number, *'children throw the bean bags into tens or units bucket- their partner must say what number they have made to get a score'* (FNA 101, 2). There was some limited teacher intervention relating to the throwing as *'Sara's throwing is erratic, she throws over-arm too hard - Sue says she may be better underarm - she is much better'* (FNA 101, 17). A focused class lesson of physical development using ball skills was also observed in School A early on in the study prior to T1. A sports development officer taught some PE lessons in the schools. The observed lesson was

taken by a supply teacher, as the usual sports development officer was absent. This was an issue in terms of the children's response as they were *'excited and lacked control in their movement. The teacher is not the usual PE cover – so she doesn't know the pupils. The children are noticeably more noisy and fussy'* (PFNA 22, 6). The session appeared *'challenging for the teacher as she doesn't know names. Osian shows bouncing (the ball) so all are going to have a go at bouncing. Some try to dribble the ball, Zack throws his up and lets it bounce, a ball rolls past him, he runs to retrieve it and another boy arrives and wrestles it from him "I was going to give it back to you!" he says – he seems put out that the other boy thought he was taking it'* (PFNA 23, 14).

Although the session was planned as a focused physical development lesson, there was no real intervention by the supply cover teacher in terms of developing the children's physical competence. The development of physical skills requires the input of a teacher and does not just happen naturally (Goodway and Branta, 2003; Goodway, Suminski, and Ruiz, 2003). Fundamental motor skill development is complex and different factors or constraints influence the development of a new skill Gallahue *et al.* (2012). The importance of constraints is that teachers and coaches can manipulate the constraints 'to promote motor development of children' (Gallahue *et al.*, 2013: 187). The lack of teacher intervention highlighted in the field notes and video may have impacted on pupils' progress in the development of Object Control skills, teachers were not using sufficient opportunities for the manipulation of the task or the environment to impact on the development of Object Control skills. It may also have been that the lack of Physical Education specialism in the primary school meant that teachers did not have the specialist knowledge required to give good modelling and appropriate feedback. Previous studies have highlighted the importance of instruction in the development of Object Control skills where even with well equipped free play Object Control skills did not develop without structured instruction (Goodway and Branta, 2003; Goodway, Savage and Ward, 2003; Robinson and Goodway, 2009). Consideration also needs to be given to the ontogenetic nature of Object Control skills and as such their relationship to culturally significant sports. Locomotor skills are phylogenetic and as such are

common to all humans (Gallahue *et al.*, 2012). The closer association of Object Control skills to sport may serve to compound the notion that they are the preserve of a Physical Education specialist or a coach. It would also seem from the analysis of the qualitative data that children had many opportunities for the development and consolidation of Locomotor skills across all aspects of their learning where teachers could intervene with instruction, but the same opportunities were not so apparent in relation to Object Control skills.

The relationship between physical competence and physical activity has been well-documented (Seedfelt, 1980; Clark and Metcalf, 2002; Stodden *et al.*, 2008). However it could be argued that if these children were not concerned with playing traditional sports, but instead were motivated to be engaged in a variety of leisure and recreational activities that did not require Object Control skills, then the need for Object Control skills is not such an issue. These children would still be motivated to be engaged in purposeful physical pursuits and as such still be developing their physical literacy. The implications are for the later Physical Education curriculum in terms of what experiences are on offer that may not rely so much on Object Control Skills and the need for a programme of study that is not dominated by traditional games.

Analysis of qualitative data demonstrated that the children in the two schools were often moving in ways that involved opportunities for developing gross motor skills, co-ordination and integrating both sides of the body. *'Children do 'apple picking' crossing the midline high and low'* (FNA 65, 6). Many of the activities that involve gross motor actions impact directly on the fine motor skills as observed in field notes and video during a handwriting session:

'The rest of class in space dancing...write dance?? Big circles with one hand then the other, two fingers - Erin struggling and Dai can't do big no. 8 in the air... Then doing 'curly c' all in the air with 2 fingers then up and dot i. Katy is enjoying dancing. The letter today is f. Mrs. Smith's group use sand trays, (V8A a) one with sand, one with rice

– 2 use Ipads. Sue's group practiced in the air to music, then out with chalk on the playground (V8A b)(FNA 69,18).

Movement was often incorporated into sessions to prepare children for concentrating. This was particularly evident between T2 and T3 in School B, *'before guided reading they do some movement to music – stretching legs out and lift, pointing toes stand and sit. Elan (the teacher) encourages all to join in – Carter doesn't really want to join in he looks very pale and tired – then they do press ups – most are unable to do this. Then lifting arms – then stand and sit. Activity lasted five minutes... children request various action songs- they do a shaking and stretching song next'* (FNB 198, 5).

The variety of movement experiences that the children had (as these field note and video observations illustrate) consolidated the balance system by giving opportunities for the body to know where it was in space in order to make spatial judgments and adaptations. These opportunities for movement show how the pupils had developed what Whitehead (2010) describes as the simple capacities of balance, co-ordination and flexibility. The broad range of activities and environments that were observed for pupils to move and learn in every day enabled pupils to refine their movement vocabulary, combining capacities such as balance and core stability to demonstrate poise as shown by *'Lilly doing a yoga stance in the playground'* (FNA 67, 21). The rich movement environments highlighted in the observations showed a breadth and balance of experiences. The range of movement experiences gave children many opportunities to adapt and refine skills in a wide variety of contexts that Whitehead (2010) highlights as key to developing the foundations of physical literacy.

Fine motor skills

In order to assess the development of both gross and fine motor skills in the Foundation Phase (an outcome identified in phase one of the study). The BOT-2 short version was measured three times across phase two of the study at T1 in

February, T2 in July and T3 in December (as outlined in Chapter 3). The BOT-2 Short Version gives a measure of motor proficiency/coordination in five domains: Fine Motor Precision (FMP), Fine Motor Integration (FMI), Manual Dexterity (MD), Bilateral Integration (BI) and Balance (Bal) (as described in chapter three). In addition it provides an overall BOT standardised score (BOTSS) and a BOT-2 percentile (BOT%). For the purposes of the research questions this study will present the subscale data for only the Fine Motor Precision subscale (FMP) and Fine Motor Integration (FMI) subscale along with the BOTSS and BOT%. Children ($n=17$) were measured at each time frame.

Overall, children did not show significant improvement in their fine motor skills over the time of the study, however these skills were above average, with School A in the top quartile. Table ten shows the means and standard deviations of the FMP and FMI along with the BOTSS and BOT% for the overall group and by School A and School B for T1 (February 2012), T2 (July 2012) and T3 (December 2012). Surprisingly there was a drop in scores at T2 in both schools. On reflection the timing of the tests may have accounted for this as T2 was very near the end of the term and children were distracted by many events happening in the schools.

Table 10: Means and standard deviations of the FMP, FMI, BOTSS and BOT%

| Group | T1 | | T2 | | T3 | |
|-------------------------|-------|-------|-------|-------|-------|-------|
| | M | SD | M | SD | M | SD |
| Overall | | | | | | |
| FMI | 8.71 | 2.08 | 8.76 | 1.71 | 9.71 | 1.90 |
| FMP | 6.94 | 1.85 | 6.88 | 1.87 | 7.00 | 1.73 |
| BOTSS | 53.94 | 10.34 | 50.71 | 6.92 | 58.59 | 11.42 |
| BOT% | 60.24 | 28.82 | 53.00 | 24.33 | 71.76 | 27.34 |
| School A - Rural | | | | | | |
| FMI | 8.00 | 2.33 | 9.00 | 1.51 | 9.75 | 1.83 |
| FMP | 6.88 | 1.73 | 7.50 | 1.69 | 6.88 | 1.24 |
| BOTSS | 56.25 | 8.78 | 53.88 | 6.62 | 64.88 | 10.48 |

| | | | | | | |
|-------------------------|-------|-------|-------|-------|-------|-------|
| BOT% | 67.25 | 21.58 | 64.25 | 22.96 | 84.88 | 15.83 |
| School B - Urban | | | | | | |
| FMI | 9.33 | 1.73 | 8.56 | 1.94 | 9.67 | 2.06 |
| FMP | 7.00 | 2.06 | 6.33 | 1.94 | 7.11 | 2.15 |
| BOTSS | 51.89 | 11.68 | 47.89 | 6.19 | 53.00 | 9.49 |
| BOT% | 54.00 | 34.08 | 43.00 | 21.98 | 60.11 | 30.84 |

The combined mean percentile score was high at Time T3, 71.76. School A has a mean percentile score at Time T3 of 84.88, which puts it in the top quartile. School B however whilst still remaining above average has a lower percentile mean at Time T3 of 60.11.

A repeated measures ANOVA was conducted (T1, T2, T3 for the: 1) BOTSS, 2) FMI, and 3) FMP for the overall group, and broken out by School A and School B.

For the combined data (both schools) the ANOVA with repeated measures for the BOTSS revealed a significant main effect for Time, $F(2,15)=5.55, p<.05$, Eta squared .43. However for the ANOVA with repeated measures for FMI there was not a significant main effect, $F(2,15)=2.99, p=.081$, Eta squared .28. and likewise for FMP, $F(2,15)=0.040, p=.96$, Eta squared .005.

As indicated above the overall BOTSS had a significant main effect for Time. Thus, post-hoc pairwise comparisons were conducted in order to examine where the significance could be found. There were no significant differences between T1 and T2 ($p=.30$) and T1 and T3 ($p=.14$). However, there was a significant difference between T2 and T3 ($p=.010$).

Table 11 provides a summary of the findings of the pairwise comparison analyses with the significance level indicated when significant.

Table 11: Summary of the findings of the pairwise comparison analyses

| Overall | T1-T2 | T2-T3 | T1-T3 |
|-----------------|-------|----------|--------|
| FMI | NS | NS | NS |
| FMP | NS | NS | NS |
| BOTSS | NS | p=.010 | NS |
| BOT% | NS | p=.027 | NS |
| School A | | | |
| FMI | NS | NS | p=.038 |
| FMP | NS | NS | NS |
| BOTSS | NS | NS(.063) | NS |
| BOT% | NS | NS | NS |
| School B | | | |
| FMI | NS | NS | NS |
| FMP | NS | NS | NS |
| BOTSS | NS | NS | NS |
| BOT% | NS | NS | NS |

Overall Findings

For the combined data for School A and B there was a consistent non-significant finding for FMI and FMP across all time points. For overall motor proficiency (BOTSS and BOT%) the only significant difference was between Time 2 and Time 3.

School A - Rural

School A showed no significant difference between Time 1 and Time 2, Time 2 and Time 3 for the FMI, FMP, BOTSS and BOT%. There was also no significant difference between Time 1 and Time 3 for FMP, BOTSS and BOT%. However, there was a significant difference between Time 1 and Time 3 for FMI $p=.038$.

School B - Urban

School B showed no significant differences between any of the timeframes.

The findings show little change in the fine motor skills over the time of the study from T1 to T3. A high level of fine motor skills at T1 may have meant that there was little room for improvement at this age. This may account for the non-significant finding for overall motor proficiency (BOTSS and BOT%) between T1 and T3. Samples of the pupils' handwriting (Appendix K) show that considerable improvements in letter formation and control were made in the year prior to this study, and by Time T1 of this research pupils were already able to form letters consistently and write with control on the lines. The pupils in this study had only experienced the Foundation Phase curriculum, and so their nursery and reception class environment was similar to the one observed during this study. Their learning would have been experiential in nature with an emphasis on play, movement and the use of the outdoors. Maude (2010:105) identifies the importance of 'sufficient and extensive experience' of gross motor activity for the development of 'co-ordinated manipulation of tools and other fine motor activities.' Kirby and Drew (2003:37) also highlight the need for a 'solid base of good motor and sensory foundation skills' for the good muscle strength and joint stability in hands and arms required for fine motor control. Some of these skills include being able to tie a single knot and cut out basic shapes with children in the Foundation Phase expected to 'have good control over pencils, crayons and brushes and draw a person with a head, legs, body, eyes, nose and mouth' by the time they enter Key Stage 2 (DCELLS, 2008:54).

The pupils in the study were in year one and still had another year in the Foundation Phase. Despite this the majority were already able to perform the fine motor skills expected of them in the curriculum documentation. Qualitative data from field notes highlighted the highly physical nature of the Foundation Phase, which may have been enabling the development of good gross motor skills needed for fine motor development. Along with this the children in both schools had many

opportunities for using fine motor skills during choice activities. This was consistent throughout the time of this study across Time T1 to Time T3. This was highlighted in field notes, from between T1 and T2: *'Chris, Stuart and Ann are threading beads'* (FNA 12, 9) *'Helen and Johnny play building with small wooden blocks'* (FNB 165, 15) *'Erin comes over to thread beads'* (FNA 18, 22) *'some children sit at a table and write out their numbers on a dry wipe board'* (FNB 80, 17) Also between T2 and T3, *'they have completed the reading part of the game and now write out some of their words on the small white boards'* (FNB 204, 2), *'the sharks and turtles use Numecon to work out their maths'* (FNB 209, 20).

Examples show how pupils were able to use their fine motor skills in a range of tasks as shown when *'Jo, Aled, Zack and Nia all manage scissors well, cutting accurately on the line'* (FNA 28, 14) *'Osian makes peg board pics'* (FNB 185, 13) *'children are making flags and paper chains'* (FNA 180, 11), *'Stuart and Aled go to the stone printing activity'* (FNA 144, 17). Most of the children demonstrated good fine motor skills with good pencil grip and being able to manage skills such as threading beads and using scissors. Despite this there were some who seemed to demonstrate developmental delays in fine motor tasks as highlighted in the field notes from School B:

'The children record their findings, some of them write independently, others have boxes to tick – they are all able to record – no need to spell accurately Elan (the teacher) tells them to "have a go". The children all get on with their recording without fussing round Elan (the teacher) for words or needing help. Elan (the teacher) scribes for one or two who need the support. Jim shows me his work – Elan (the teacher) has helped with two words – he has written a sentence nearly on the lines –having seen his pencil grip I am surprised at what he can do!' (FNB 59, 8). Although Jim is one of a small number of pupils who had less well-developed fine motor skills, it was still surprising given the amount of gross motor activity and the opportunities for developing fine motor skills that were evident throughout the Foundation Phase.

The opportunities for developing gross and fine motor skills throughout all the areas of learning was an striking feature of the Foundation Phase approach. Traditional and more formal approaches in education such as the Key Stage 1 curriculum have discrete planned lessons for the development of physical skills, and it is predominately in these lessons that children develop their motor skills. However in the Foundation Phase, as demonstrated in the qualitative data, although there were still planned whole class physical development lessons, the development of these skills also happened every day throughout in all aspects of learning.

Interaction with the environment

Levels of non-sedentary behaviours were high and similar in both schools, as was the amount of time using the outdoors. Pupils who had more access to natural environments had higher scores on the motor tests.

The physical activity focus of the Foundation Phase is not moderate to vigorous physical activity as might be recommended by Physical Education rather it is a reduction in sedentary behaviour (sitting in seats). Thus the physical activity is that of pupils being 'less sedentary' in their learning, as noted in the previous section (as opposed to measures of MVPA). Observations were used to identify the number of pupils in the class that were active during learning sessions (not sitting at their desk) every fifteen minutes. These observations were then placed into categories of the percentage of pupils that were active. Table12 shows the numbers of observations in each percentage category.

Table 12: Number of observations in each percentage category.

| Percentage of pupils active | School A No. of observations | School B No. of observations | Total |
|-----------------------------|---------------------------------|---------------------------------|-------|
| 0%- 24% | 15 | 25 | 40 |
| 25% - 49% | 9 | 8 | 17 |
| 50% -74% | 10 | 14 | 34 |
| 75% - 100% | 35 | 33 | 68 |

Out of 149 observations, 92 observations (62%) saw more than 50% of the number of children in the class out of their seats and moving around whilst engaged in their tasks. The greatest number of observations, 68, was in the 75%- 100% of children active category. A chi-squared analysis was conducted to see if there were differences in the physical activity data by school. The chi-squared analysis of the data showed no significant differences between schools in the number of observations in the percentage of activity categories.

Although levels of activity on individual days varied, there was no increase as children progressed through the Foundation Phase, and interestingly there was also no decrease as they were getting older and moved into year two between T2 and T3, indicating that there was a still an emphasis on active play-based learning even though they were older and approaching the more formal setting of Key Stage 2.

A feature of this activity in learning was the variety of activities. This was seen in a 'planning time' (free choice of activities) session in School B:

'Once all children have planned they go and get on with their activities getting their equipment that they want. Outside...Llion plays football. Megan plays hoop and target game. Iestyn is playing with a bat and ball. Elin is making a game with skittles, beanbag and ball. Roxy is drawing with chinks on the playground, while Helen is playing a game using bottles filled with coloured water... At the far side of the playground two of the girls draw on the big chalk boards they are running back and fore to the tub of chinks in the middle by Roxy fetching different colours. Johnny and Tom are on the wooden stage area building with blocks, Sean and Rhys jump on and off, before Rhys sees Carter with a ball and runs over to play football with him. Nicole plays with a football dribbling it along the yard while Caryl and Sian are over by a large tyre playing with skittles. Elin develops her game with the bat and ball hitting the ball along the yard with the bat. Sian jumps up from her game and picks up the hoop, she skips across the yard' (V3B). 'Meanwhile inside Conrah and Sion play with small play penguins... They seem to play individually but share the space at times telling each other what they are doing sporadic dialogue develops role play themes. Conrah asks to film a tour, he films the penguin game and Megan next to them playing with the small world fire station. Sion and Megan are playing together with the penguins and firemen as Conrah films the game and the area they are in' (CTV1) (FNB 60- 61).

This variety of movement was not only evident during choice activities, but also in the focused sessions and in all areas of learning. During mathematical development children were outside doing a *'jumping and measuring activity'* (FNA 10, 10) or looking for 2D shapes outside, *'Sion runs around then Conrah says he has found a shape so Sion runs across'* (FNB 52, 5). *'Elin runs round saying she is doing shapes'* (FNB 52, 11), *'Sian and two others use chinks to draw big curved and straight shapes on the big blackboard in the yard'* (FNB 53, 7). Movement in mathematical development was also seen inside as the children do *'tens and units activities, bean bags and buckets – children throw beanbags into tens / units bucket'* (FNA 101, 1). The children often *'stand at the tables and walk around to get resources'* (FNA 28, 11), *'Jo, Aled, Zack and Nia all manage scissors well, cutting accurately on the line'*

(FNA 28, 14). Pupils at times decide to work on the floor, *'some kneel, some sit, some lie on their tummies'* (FNA 57, 2) resulting in more activity as the *'floor group are noticeably more active, getting up and down to fetch resources'* (FNB 83,11). *'They do move about, lie/sit/fidget whilst working, but mostly stay on task'* (FNB 83, 19).

These examples highlighted how the playful nature of the tasks allowed pupils to be active whilst involved in their learning. This was in stark contrast to the formal learning that was traditionally seen in Key Stage 1 settings prior to the Foundation Phase. This saw learning about number concepts commonly delivered through the use of worksheets and maths books with pupils predominantly inside sitting at tables (Hope *et al.*, 2007; Maynard *et al.*, 2011; Dowda *et al.*, 2009; Maynard, 2007). The physical activity guidelines for pupils aged five to seventeen years recommend the accumulation of at least sixty minutes of moderate to vigorous intensity activity every day (WHO, 2011). Pate *et al.* (2006) highlight the need for studies to focus not just on the moderate to high intensity activity, but to identify sedentary and non-sedentary behaviours as there needs to be more of a focus on the health benefits of lower intensity activity and non-sedentary behaviours. Although this study did not seek to assess health benefits per se, it did focus on the sedentary and non-sedentary behaviours of the children and highlighted the low levels of sedentary behaviours in the Foundation Phase. The play-based nature of the Foundation Phase and the physical environment both contributed to the lack of sedentary behaviour and these aspects will be explored in greater depth in Chapter 6.

Outdoor learning

A high percentage of the learning was happening outside, as demonstrated in the wide variety of activities. Analysis of the field notes showed how many sessions involved access to outdoor learning, this is shown in Table13.

Table 13: Outdoor learning sessions observed between T1 and T3

| School | No. of sessions observed | No. of sessions using the outdoors |
|--------|--------------------------|------------------------------------|
| A | 36 | 16 |
| B | 36 | 14 |

The total number of sessions observed was seventy-two. Thirty of these sessions made use of the outdoors, 42%. Twenty-three days had part of the learning outside. Four were all inside apart from play and lunch times. Both schools used the outdoors a similar amount of time. The amount of time using the outdoors was consistent over the time of the study, 53.3% of outdoor sessions between T1 and T2, 46.7% of outdoor sessions between T2 and T3. Analysis of pupil video tours across the study from T1 to T3 showed that children filmed outside for 18 tours out of 47 in total, 38.3%, indicating that the outdoors was an integral part of their experiences in school.

The schools did not use the outdoors every day as on some occasions the weather was deemed too bad, as field notes demonstrate, '*weather horrible VERY windy and wet*' (PFNB 42) '*cold blustery, forecast rain and wind*, (FNB 80, 3). In general the Foundation Phase children had wet-weather clothing but very windy weather was deemed unsafe for small children to be outside.

Although there is no specified amount of time allocated to the use of the outdoors in the Foundation Phase, the philosophy places great importance on teachers using the outdoors as another classroom where children can work on a daily basis (Davidson, 2010) and this was clearly evident in both schools. A striking feature was the way the schools incorporated the outdoor environment into many different aspects of learning. The activities outside were extremely varied, ranging from the use of the local environment for planned outdoor activities and cross-curricular work, to a seamless flow of child-led activities in the school playground. School B used a wooded Forest School site for activities based on a story. Children '*enjoyed the mud and the puddles*'(PFNB 6, 4), they had to '*find sticks etc. to make stick man from the*

story' (PFNB 6, 10). *'Children climbed a tree stump'* (PFNB 7, 5) (V5B a, b, c). School A used the local beach as a site for learning and doing whole-class activities. As the teacher explained *'we went with Dosbarth Oren (Orange Class) down to Newgale beach, that whole day of activities on the beach, it led to music making it led to writing, art, dance, it just evolved'* (TA).

Some whole-class focused tasks were planned for outside, such as the use of a treasure hunt / trail to deliver language and maths activities where *'words for subtraction and addition hidden around the playground. Children run and collect with partners and see how many they can find'* (FNA 37, 7) (V7A)

Children had access to the outdoors during free choice activities, *'Elin is playing a game where she hides the cones around the area. Sarah and Enfys have to run, find and collect the cones (made up orienteering!).'* (FNB 62, 4) and *'free choice using 'stones' plus a challenge if want to.....can you make a stone float?'* (FNA 152,3) (V1A and V2A). At playtime children were engaged in many aspects of outdoor play, *'Helen playing on the log stepping stones jumping and stepping from one end to the other'* (PFNB 49,9), *'Rhys, Emrys and Tom play football with a foam block. Charlotte and two others run round with hoops. Conrah and Sion play on boat climbing over taking weight on hands... Sean and Llion climb in and out of boat. Carter and Nicole play chasing game. Sian has balance board. Girls face each other on balance board work it like see saw'* (FNB 205, 14).

Existing studies have shown that children play differently indoors and outdoors, (Shim, Herwig, and Shelley, 2001, Fjortoft, 2000, 2001). This behaviour is influenced by the affordance of the environment (Niklasson, and Sandberg, 2010). Kytta (2004) highlights how affordances develop and change as children grow and develop new skills and as such are able to interact with the environment in different ways. Kytta's (2004) study identified natural environments as providing a greater number of affordances. Previous research suggests there will be improved motor development in children using the natural environment for learning (Fjortoft, 2000). However

the landscape in Fjortoft’s study was a woodland area with ‘a high diversity and heterogeneity’ and ‘complexity in topography and vegetation’ (2000:30). In both schools in this study the natural environment was not as complex, but was supplemented with trim trails and climbing equipment. Both schools had invested in creating meaningful outside learning spaces as part of their support for the Foundation Phase as well as being part of a developing school ethos, these aspects are discussed in depth in Chapter 6. School A did allow the children free access to natural areas in the grounds during their learning sessions and playtimes while School B’s Foundation Phase play area was tarmac and fenced off from the Key Stage 2 play area, which had a field and natural play space. It was interesting to note that pupils from School A had better gross motor scores as measured by TGMD-2 and BOT-2. Table 14 shows the mean scores at T3 for BOT Standardised score (BOTSS) and BOT percentile rank (BOT%) and mean scores for Gross Motor Quotient (GMQ) for both schools.

Table 14: Mean scores at T3 for BOTSS, BOT% and GMQ for School A and School B.

| | School A | | School B | |
|-------|----------|--------|----------|-------|
| | T1 | T3 | T1 | T3 |
| BOTSS | 56.25 | 64.88 | 51.89 | 53.00 |
| BOT% | 67.25 | 84.88 | 54.00 | 60.11 |
| GMQ | 96.25 | 111.63 | 88.30 | 97.60 |

An ANOVA was conducted on the mean scores at T3 revealing that School A had a higher mean score than School B for the BOTSS ($F[1,16]=7.49, p=.015$) and the GMQ ($F[1,16]=8.25, p=.011$). It is not possible from the design of this study to draw any conclusions about why pupils in School A had higher mean scores than pupils in School B, however there are several factors that may account for this. As highlighted previously, the pupils in School A had more access to natural environments than School B. The pupils in School A were able to play on the field, on uneven surfaces, amongst willow tunnels and on a constructed trim trail throughout their outdoor learning, at playtimes and at lunchtimes. The pupils in School B were restricted to a

tarmac outside area for much of their outdoor learning only having access to the larger green spaces of the school field during the play times and lunch times. Socioeconomic factors may also have been a factor, with more of the pupils from School B coming from an area of socioeconomic deprivation than those of School A. Existing research highlights that pupils from areas of socioeconomic deprivation are more likely to have delays in motor development (Connor-Kuntz and Dummer, 1996; Goodway and Branta, 2003; Goodway and Rudisill, 1997; Hamilton, Goodway and Haubenstricker, 1999). This may account for lower mean scores in motor tests for School B, and it is noteworthy that the mean scores were lower at T1. Also of interest is that there was a significant improvement in GMQ from T1 to T3 ($p=0.011$) for School A, but this was non-significant for School B ($p=0.058$). This may be due to the greater use of the natural spaces in School A, or a result of a lack of environmental support in the home background (Goodway and Rudisill, 1997; Hamilton *et al.*, 1999).

Maynard and Waters (2007) highlighted missed opportunities for outdoor learning in Foundation Phase pilot schools. However the findings from this study suggest that the two schools have moved on from early pilot schools and appear to be incorporating the outdoors in much of the learning. That said, more extended periods of time where the children had greater access to free play in wilder natural spaces were not being fully incorporated into the Foundation Phase. Although both of the schools had some natural areas they lacked wild spaces with 'loose parts' advocated by Nicholson (1972:5) who attributes creativeness and inventiveness to the number of these loose parts. Diversity of affordances, vegetation and animal life provide these 'loose parts', however, sessions for pupils to explore biodiversity, build dens and have free creative play in wild spaces were not observed.

The findings in this section demonstrate that the improvements in pupils' physical competence in the Foundation Phase increased over time, with significant improvements in Gross Motor Quotient between T2 and T3 ($p<.001$) as measured with TGMD2. This was attributed to a significant improvement in Locomotor skills

between T2 and T3 ($p < .001$). On analysis of the qualitative data it was evident that there was a variety of learning experiences in the Foundation Phase which enabled pupils to learn in a highly active manner interacting with a variety of environments and developing their Locomotor skills throughout all aspects of their learning as well as in specific lessons for physical development. These opportunities were consistent throughout the Foundation Phase and a play-based active learning environment was being maintained into year two (between T2 and T3). Access to the natural environment was greater in School A than School B and pupils in School A had higher scores for GMQ, and BOT standardised score. This may support existing research that suggests pupils who play more in the natural environment develop higher levels of motor competence (Fjortoft, 2000). This may also be attributed to greater numbers of pupils from School B being from an area of socioeconomic deprivation.

5.2.1.2 Motivation

Pupils were motivated to move in a variety of contexts during all aspects of their learning and they were highly engaged in their learning.

Engagement in learning

High levels of engagement were noted, in particular in choice activities and activities that children perceived as play. An interesting finding was that pupils with additional learning needs were also engaged in meaningful learning experiences without the need for high levels of adult support. Children were motivated to move in a wide variety of situations, both extrinsically for the purpose of completing a functional task or movement outcome, and intrinsically for the experience and enjoyment of the actual movement.

Laevers (2000) suggests strong links between motivation and involvement, identifying involvement as one of the predominant characteristics of motivation and engagement. Observations using the Leuven Involvement Scale were carried out to assess the levels of the pupils' involvement in their activities and as such contribute

to the assessment of their motivation and engagement. Data from the Leuven scale was used to complement the findings from field notes, video and pupil tours during analysis in a process of data merging (outlined in Chapter 3). The Leuven scale is scored from one to five with one being extremely low where the child's activity is simple, repetitive and passive and five being extremely high where the child shows continuous and intense activity revealing the greatest involvement (Laevers, 2000). This section reports on data from structured observations, field notes, video and child tours (described in Chapter 3). Table 15 shows the scores for observations using the Leuven Involvement Scale.

Table 15: Leuven Involvement scale

| | Total | Score 5 Extremely high | Score 4 High | Score 3 Moderate | Score 2 Low | Score 1 Extremely low | Mean score |
|------------|-------|------------------------------|-----------------|---------------------|----------------|-----------------------------|------------|
| No. of obs | 56 | 17 | 16 | 14 | 8 | 1 | 3.7 |
| % of obs | 100% | 30.4% | 28.6% | 25% | 14.3% | 1.8% | |

The mean score of 3.7 indicates that children had high levels of involvement in their learning as can be seen in Table 16. 58.09% of all the observations were scored in the high / very high category and only 16.1% were in the very low/ low category. These findings were high in relation to previous research where post-test scores after an intervention to improve involvement were 3.47 (Milton Keynes County Council, 2010).

Table 16: Percentage of observations in each category of the Leuven Involvement scale

| Category of involvement score | High / very high engagement 4 and 5 | Moderate engagement 3 | Low / very low engagement 1 and 2 |
|-------------------------------|--|--------------------------|--------------------------------------|
| Percentage of observations | 59% | 25% | 16 % |

Part of the Leuven Involvement scale includes qualitative observations. These qualitative comments were also noted which recorded some of the behaviours that led to the scores. These are shown in Table 17.

Table 17: Qualitative Comments for the Leuven Well-being observation

| |
|--|
| Persists throughout despite some distractions |
| Tongue out with concentration |
| Finished activity and put it away |
| Focused on the story and discussing it, remarkable as she is EAL |
| Fetching resources |

Table 18: Involvement scores and percentage per category

| Task | Involvement | | | Total |
|----------|---------------------------|----------------------|----------------------------|--------|
| | Very low/ low involvement | Moderate involvement | High/very high involvement | |
| Directed | 24.1% | 34.5% | 41.4% | 100.0% |
| Choice | 7.4% | 14.8% | 77.8% | 100.0% |

A Chi-squared analysis was undertaken to examine if engagement levels were different if the teacher selected the task or the child selected the task. The categories of very and low were combined and high and very high were combined in order to have large enough numbers of the Chi-squared analysis although two cells were still below 5. The Chi-squared analysis found higher levels of engagement in tasks that the child selected with significance of $p = .021$.

The data indicates higher levels of involvement when the task was chosen by the pupil and not teacher-directed. This finding supports the previous findings of Deci and Ryan (2000) and Deci *et al.*, (1994:123) who define autonomy support as valuing 'self-initiation', 'children's choice, independent problem solving, and participation in decision making', and is strongly associated with intrinsic motivation. Pupil choice, experimentation and self-initiation are features of an autonomy supportive climate (Reeve and Jang, 2006; Hastie *et al.*, 2013). The data from the Leuven Involvement scale observations supports this. Activities that were chosen by the children were seen to have higher levels of involvement in the task. Pupils were clearly more motivated and engaged when they had selected the task.

The findings from qualitative observations were analysed to complement the quantitative data. There were numerous examples from observations in field notes that commented on pupil engagement across a range of activities, '*Katy is involved in her Picasso portrait focused and getting on –continuing work she has already begun. The writing group also all engaged* (FNA 6,10). As identified in the Leuven involvement observations high levels of engagement were particularly evident in child choice activities with field notes and video footage (V4, B) highlighting this '*children are all engaged and busy in a whole range of activities*' (FNB 90, 17) and '*all children very focused on tasks and play* (FNB 91, 20). Reflections in field notes commented on how it was '*quite remarkable to see how busy, focused and engaged the children were during the planning time (free choice)* (FNB 92, 11).

There were observed exceptions when pupils were *'all engaged except Jo who is day dreaming'* (FNA 9,1). *'Jim fussing with his knee'* (FNB 86, 13) *'Chris fidgets, moves from his place he is only child not focusing on the story'* (FNA 133, 5) *'Jim doesn't seem to be doing as he is supposed to - he lies on top of the sandpit!'* (FNB 161, 20).

Although there were exceptions, as the Leuven observation data and field notes show, the consistent theme with this curriculum was high levels of engagement by the majority of pupils most of the time. The data shows that when teachers made the choice of activity the children were less engaged. Despite this the levels of engagement were still high with 76.9% of observations for the teacher-directed tasks still in the moderate to very high levels of engagement categories.

This may have been related to the playful nature of the tasks. Despite being teacher-directed many activities included cues that children associate with play (Howard and McInnes, 2010). In particular tasks were often outside, fun and involved being able to move around during their activities.

The motivation for movement can be both extrinsic and intrinsic, but of particular importance to the development of pupils' physical literacy is *'embodiment-as-lived'* (Whitehead, 2010:2) and the value of bodily physical experiences for their own intrinsic worth (Brown, 2013; Mechikoff and Estes, 2010;). Intrinsically motivated movement was evident throughout the children's learning in both schools. Children moved spontaneously in response to their emotions. The curriculum allowed space for children to demonstrate these emotional responses to learning (such as excitement) through physical responses. For example children might run up and down when excited or run around an area. At times the physical/ movement response to learning was in structured learning sessions and this non-verbal expression was possible due to the play-based nature of the approach. One such example was evident on video footage of the stones session outside in School A, *'Stuart, observing the children making boats for the stones to float in was very excited... He jumps up and down on the spot and skips excitedly saying "wow, that would be impossible"'. His actions are a visible expression of his excitement and he skips*

off to another activity' (V1, A). Field notes also highlighted this in School B as *'on several occasions the children jumped up with delight – Rhys in particular jumping frog like up and down'* (FNB 96, 6). On other occasions this movement was evident due to children being free to go off task *'Dai, Peter and Zack go outside to do the jumping and measuring activity. They don't do standing jumps, but enjoy running and jumping. Then they do some standing jumps once Peter has marked a line to stand behind'* (FNA 10, 9). It is interesting to note here the distinction between jumping for the purpose of the measuring task, and the running and jumping as intrinsic enjoyment of movement.

During free play sessions the intrinsic enjoyment of movement was particularly evident one example being *'Lilly is doing yoga stance in the playground'* (FNA 67, 21) and outside *'Ann is on the grass alongside the trim trail, she is cartwheeling over and over again. Some of the other children are on the trim trail spinning around the rope or hanging from the bars. Children run in and out of the willows and they seem to be enjoying the freedom of just running as there does not appear to be any game that they are playing'* (V10, A). On the child-led video tours (outlined in Chapter 3), *'Aled is playing on the twister mat on his own he seems to be enjoying just trying out the movements'* (CTV2). Children also identified activities they liked doing with tours showing *'having fun on the bars'* (CTV3) and *'climbing on the walls'* (CTV4). What appeared to be evident here was that the children were engaging in movement for movement's sake (Arnold, 1979; Brown, 2013). The children were moving and identifying activities they liked to do that had no apparent outcome other than the movement itself. The children seemed to be intrinsically motivated to move for the sheer joy of movement. Regardless of the motivation such activities can be seen to contribute to children's developing balance and co-ordination (Kirby and Drew, 2003; Goddard-Blythe, 2005) and many actions such as spinning and inversion are crucial elements of sensory integration (Ayres, 2005).

The field notes and video observations highlighted how children were intrinsically motivated to move and the fact that they were doing the activities without

prompting may suggest they saw the activities as valuable in themselves (Arnold, 1988). Kirk (1989:1) speaks of the 'reflective consciousness' that makes human movement unique and Van Manen (1990) highlights the lived experiences of movers and their continual reflection on movement experiences. However in this study there was little evidence of specific reflection associated with movement experiences. Children did on occasion speak about their movement as previously highlighted, *Johnny says "creative movement is trying to describe something with our bodies"* (FNB 112, 19), *Conrah says he wants swimming, he loves swimming* (FNB 197, 10) and *Rhys tells me he couldn't stop running because he was running so fast* (FNB 215, 10) but these examples were rare. However, the qualitative data and involvement data suggest that children consistently demonstrated movement responses in their daily activities. The nature of the curricula environment in which they were learning appeared to afford opportunities for children to respond in this way. Thus the Foundation Phase curriculum and children's responses to it 'resonate with embodied competences' and the children 'know intuitively how to move' (Whitehead, 2010:51).

Communication and collaboration

Pupils learned through effective communication and high levels of collaboration.

A strong feature of the pupils' learning was their communication and collaboration both in the organization and preparation of their tasks and during the completion of tasks. Children were highly social and co-operative in their play. Nine children were observed using the structured observation tool the Social Play Continuum (SPC) (Broadhead, 2006) (outlined in Chapter 3). The observations took place during phase two of the study and were carried out when pupils were engaged in free choice play activities. Seven of the children observed were judged to be operating exclusively in the co-operative domain, and two operating in the highly social domain with aspects of the co-operative domain (SPC 1-3).

During the analysis of data from field notes, 'extreme case analysis' identified one

pupil as an extreme case study (Carnacelli and Greene, 1993:235) (outlined in Chapter 3). This led to the use of the SPC as a complementary method to pursue this data from another source and gain a deeper insight into the issues identified. The extreme case analysis of field notes identified Josh, who was autistic, as struggling to engage in social play identifying how *'he seems very happy to play alone and focuses on the Lego man'* (FNB 91,6). The SPC identified that he was operating in the associative domain and this will be discussed in greater depth later in this chapter.

Pupils often worked in pairs and helped each other with tasks without prompting by the teacher. For example *'Jo and Zack help each other to draw round the lids'* (FNA 28, 7). Some of the tasks required pupils to be in pairs such as treasure hunts when *'in pairs they get a sign, children run and collect these with partners to see how many they can find'* (FNA 37, 12). At other times they choose to be in pairs *'Rhian and Andrea go to sit on logs in the reading corner and share big books made by the children, they are laughing and giggling they have a book that is huge and are having to help each other to hold it and turn pages'* (FNA 150, 13).

A consistent feature of this collaborative work was the pupils' effective communication during the tasks. Field notes highlighted this commenting that *'it is quite remarkable how they get stones, look at them, show each other and discuss what they see'* (FNA 145, 14) *'the children are really good at thinking silently then turn to partner and discuss the story'* (FNB 87, 6), it was *'really impressive how they all talk about the story in their pairing'* (FNB 87, 9). *Children pair and share what they are doing* (FNA, 129, 16). Data from other sources also demonstrated pupils' effective communication skills, with video footage showing how Jo and Cai played with stones creating a town. They discussed the stones they chose and what they were for in the town. They explained in detail to other pupils that passed and came to see what they had made (V9). Video of structured sessions also showed pupils with good levels of communication working in pairs whilst completing a maths trail outside. The children were discussing where they would go for clues and working out the answers together once they had found them (V7a, b, c).

These examples of co-operative learning were a common feature throughout the time of the study from T1 to T3 and the lack of friction between children demonstrated that cooperative learning was a normal feature of their learning. An example of this was noted when pupils were clearing equipment away after a task, *'Osian and Katy help each other passing bean bags to each other'* (FNA 103, 1) *'they are clearly used to working in pairs and do not argue'* (FNA 103, 3) *'they work together to gather them up'* (FNA 103, 12), *'None of the children argue with their partner'* (FNA 103, 14)

Sayer *et al.* (1997) highlight how functioning effectively in our increasingly complex society requires active management of interactions with others. Broadhead (2006:202) explains that children operating in the cooperative domain are 'functioning intellectually and socially' and are more likely to 'connect with and understand other children's knowledge along with a deeply fulfilling, emotional engagement with the world around them'. These cooperative and highly social learning experiences 'expose children to other children's perspectives and they become experts for one another, scaffolding their own and their peers' learning' (Broadhead, 2006:202). This became particularly evident during this study in relation to pupils with additional learning needs and will be discussed in more depth later in the chapter. The combination of developing self-awareness and social interaction with peers is crucial in the development of perceptions as Whitehead (2010:63) explains 'the more individuals come to know themselves as embodied, the better they are able to read off nuances of the experiences of others'. The rich variety of opportunities for pupils to experience movement and interaction with peers in the Foundation Phase may play an important role in the development of a sense of self and also empathy for others.

5.2.1.3 Confidence

This section relates in particular to the attributes of physical literacy of confidence and physical competence, self-confidence and sense of self. These findings arose

from data that was generated from structured observations, field notes and the Harter and Pike (1984) pictorial perceived physical competence sub-scale (Harter and Pike, 1984) (described in Chapter 3) and are reported in more depth in this section.

Perceived physical competence

Pupils' perception of their own physical competence significantly improved between T1 and T3. Pupils were able to make accurate judgments about their physical competence and pupils with lower levels of motor competence and perceived competence were still motivated to move and engage in learning.

Paired sample t-tests ($N=18$) were conducted on the Harter and Pike perceived physical competence six item score subscales (T1 and T3) in order to examine if children's perceived physical competence changed across the Foundation Phase. The mean score at T1 was 3.14 equating to a child who thought they were 'pretty good' in the area of physical competence. The mean score at T3 was 3.34 also equating to the 'pretty good' category in physical competence. There was a significant difference in the mean perceived physical competence scores on the six item scale between T1 ($M=3.14$, $SD=.43$) and T3 ($M= 3.34$, $SD=.36$); $t(17) = -2.69$, $p=.016$

Pupils' perception of their own physical competence significantly improved between T1 and T3 (as indicated above).

The concept of perceived competence is a multidimensional concept and it takes time for this to develop (Harter, 1999; Fox, 2010). Harter (1999) highlights how young children, particularly under the age of seven, tend to be inaccurate in their perception of their physical competence. Children of this age and younger tend to link effort with mastery of a skill (Goodway and Rudisill, 1997; Harter, 1999; Harter and Pike, 1984; Nicholls, 1978; Stodden *et al.*, 2008). The link between perceived competence and motivation to engage in physical activity has long been recognised

(Brustad, 1993; Carroll and Loumidis, 2001; Deci and Ryan, 1985; Nicholls, 1984). Stodden *et al.* (2008) highlight that if children under the age of seven are inaccurate in their judgements about their perceived physical competence, then even those children with lower levels of physical competence may remain motivated to engage in physical activity. This may give an opportunity for ensuring high levels of engagement in physical activity and as such is an ideal time to ensure the development of physical competence.

It is interesting to note that the pupils viewed themselves as “pretty good” and that their scores on the six item scale improved significantly between T1 and T3 (as indicated above). Previous research indicates that interventions to develop physical competence, when delivered in a mastery motivational climate, have a significant impact on perceived physical competence (Logan *et al.*, 2013; Robinson *et al.*, 2009; Robinson, 2011). Although in this study there was no intervention, the Foundation Phase is a highly active play-based curriculum where pupils have high levels of physical activity. The autonomy supportive approach of the Foundation Phase along with these high levels of physical activity may have resulted in them perceiving themselves to be highly physical beings and as such see themselves as physically competent. These high levels of perceived competence are important in relation to engagement in physical activity and as such to the development of physical literacy. An attribute of physical literacy is motivation (Whitehead, 2010). The strong association between perceived physical competence and motivation to be physically active means that a curriculum that improves perceived competence may impact on motivation to engage in physical activity, and contribute to the development of physical literacy.

Many of the children believed they were “pretty good” in their perceived physical competence. Thus, it was interesting to examine how children’s perceptions of their physical competence compared to their actual motor competence.

Pupils were able to make accurate judgements about their physical competence.

A Spearman's rank order correlation between the TGMD-2 GMQ and the mean scores of the six item perceived physical competence subscale at T3 revealed a significant correlation between the two scores ($r_s=.56, p=.014$). This correlation suggests in this small sample of pupils there was some accuracy in their perception of their own physical competence.

Although the numbers of pupils in the sample are small, the findings are particularly interesting as Harter and Pike (1984) suggest that children below the age of seven are unable to make accurate judgements about their physical competence. Existing research supports this suggesting that young children are inaccurate in their judgements of their physical competence (Goodway and Rudisill, 1997). Fox (2010) highlights the complexity of the development of self-perception, and suggests that this inaccuracy at a young age may be as a result of limited experiences on which to judge ability levels in relation to others. It is this experience of movement in relation to others that may account for the unusual accuracy in judgement found in this study. Children were observed in the study working both inside and out, running, jumping, balancing and climbing. Comments in the field notes illustrated the active environment; *'Tomos has one foot and one hand balance'* (FNA, 6, 17), *'a group of boys went outside to do jumping'* (FNA, 12, 2), *'children are extremely active, all seem to be running about playing horsey and chasing games'* (FNA, 14, 12), *'some kneel, some sit, some lie on their tummies'* (FNB, 57, 2) *'Enfys runs past with a cone and says "we are playing a brilliant game"'* (FNB, 62, 10). The highly play-based nature of activities meant that children were moving in and around their peers throughout the day and as such were continuously able to make judgements about their physical competence in relation to those around them.

Sheets-Johnstone (2000) explains that as young children we learned about our bodies and learned to move ourselves. We also learned an understanding of the bodies and movements of others. Although Sheets-Johnstone is referring to infancy, this developing of self-awareness continues in early childhood. Whitehead (2010) explains by challenging the embodied dimension we contribute to self-realisation,

and although developing physical competence is part of this process the understanding of the embodied self is more complex than the improvement of fundamental motor skills. These findings that show young children developing an awareness of their own physical competence suggests a growing understanding of their embodied dimension, an important aspect of physical literacy.

The typical child in the Foundation Phase felt ‘pretty good’ about their perceived physical competence and there was a significant relationship between perception of physical competence and the children’s overall FMS (as measured by the GMQ of the TGMD-2). However, within the study there was a subset of children who did not have high perceptions of physical competence. This small number of children felt ‘sort of good’ about their perceived physical competence. Thus it is interesting to examine how children with lower perceived physical competence interacted with the Foundation Phase. Four children were identified with low perceptions of physical competence and these children serve to illustrate how they interacted with the Foundation Phase.

Table 20 shows the perceived physical competence at T1 and T3. At T3 all of the children had a score of 2.8, which meant that they felt they were ‘sort of good’. Two of the children improved in their scores, and one stayed the same, however Elin’s score went down and this (as noted in the Spearman’s rank correlation) was an accurate judgement in relation to her GMQ as measured by the TGMD-2.

Table 20: Harter scale scores for pupils with low perceived physical competence

| Name | T1 | T3 |
|-------------|-----------|-----------|
| Rhys | 2.2 | 2.8 |
| Elin | 3.2 | 2.8 |
| Sean | 2.5 | 2.8 |
| Carter | 2.8 | 2.8 |

Of interest to note is that although some of the pupils felt 'sort of good' about their perceived physical competence, the qualitative data highlights how these, *pupils with lower levels of motor competence and perceived physical competence were still motivated to move and engage in learning.*

Deci and Ryan (1985) suggest that an individual's motivation varies according to changes in perceptions of competence. Therefore these pupils would not be expected to be intrinsically motivated to participate in physical activity. This would be due not only to having poorer motor skills, but also having an accurate perception of those skills as being "sort of good" as opposed to "pretty good" or "good" as were the rest of the children in the sample. Despite lower perceptions of physical competence, analysis of field notes and video data show these particular children were highly engaged in physical activity across all areas of learning and across the time of the study from T1 to T3. Elin, who had a score of 2.8 on the Harter scale, was often highly active as seen when observed in a maths session, *'Elin runs round saying she is doing shapes using the language "curved" ' (FNB 52,11)* also during a free choice time, *'Elin is making a game with skittles, bean bag and ball, she is playing a game where she hides the cones around the area' (FNB 60, 62).* Sean and Carter were also active in their learning and happy to engage in physical activity, *'Sean and Llion climb into and out of the boat. Carter and Nicole play a chasing game' (FNB 205, 21).* *'Tom and Carter run together, Tom says 'amazing' they are in a quiet section and seem to be devising a game. Carter leads and Tom follows. They are playing some sort of pretending game... They progress the same game into a bigger area doing the sound effects as they climb, run, jump and crawl all around' (FNB 169, 20).*

One pupil who was particularly interesting in this respect was Rhys. Rhys also had a low perceived competence score although it did improve from T1 to T3. Rhys had very poor movement competence; he was in the 27th percentile compared to same-aged peers for motor skills as measured by TGMD-2 and the 31st percentile for motor proficiency as measured by BOT-2. His brother has developmental co-

ordination disorder, and such poor scores on these assessment tools may suggest that he too has issues with motor development. Despite this, in the Foundation Phase setting he was able to complete his tasks and was happy to physically engage in the learning environment. During the sports day practice between T2 and T3 he did appear to have an inaccurate assessment of his physical competence when he *'tells me that he couldn't stop he was running so fast that he went flying (he came 3rd/4th) (FNB 215, 10) 'Rhys comes to tell me again how fast he was going' (FNB 215, 15). This confidence to be physically engaged was evident in all areas of learning even early on in the study between T1 and T2 *'Rhys (chooses) construction outside to build a robot' (FNB 59, 13). 'On several occasions the children jumped up with delight – Rhys in particular jumping frog-like up and down' (FNB 96, 6).**

During the Physical Development session in the hall- *'Rhys has good straight shape' (FNB 116, 22) and in the class council meeting 'Rhys wants a football pitch in the small playground' (FNB 89,5). In a discussion with Rhys about what he liked to do he said 'he likes football and plays in the garden with his dad- but doesn't go to any clubs' (FNB 213, 1). As part of the sports day practice *'Rhys ran and fell over as he finished' (FNB 215, 5) 'Rhys and Roxy are able to do the sack race – both have good jumps- Rhys wins! And falls over again- he announces his win – his speech is quite robotic like his movement he speaks in a very pronounced way (FNB 216 8).**

This apparent confidence in his ability is interesting in light of his accurate perception of his physical competence when assessed with the Harter scale (which, as shown previously, was low). It may be that the Harter scale is not an accurate assessment tool for pupils with issues with co-ordination, or that Rhys had developed a low perception of his physical competence from outside of the Foundation Phase and so did not transfer those perceptions into the setting. Children with low actual and perceived competence may experience failure in movement environments so their motivation to move and willingness to engage is diminished. However the Foundation Phase focuses on individual growth and reinforces positive persistence. Thus despite low actual and perceived competence

Rhys was still excited to move and chose to engage in activities. This has implications for working with pupils like Rhys. If children are leaving the Foundation Phase with motor skills that still need to be developed and consolidated, then it is important to consider the types of movement experiences that they have ensure they are not exposed to failure and as such disengaged from activity. Movement experiences must maintain their motivation for physical activity and therefore enable the development and consolidation of physical competence.

Stodden *et al.* (2008) highlight the importance of developing children's physical competence in the primary school to ensure lifelong engagement in physical activity. Rhys's data may suggest that for the children with poor motor scores and accurate perceptions of their competence the Foundation Phase maintains children's motivated to engage and at this point in time Rhys was not being drawn into the 'negative spiral of disengagement' (Stodden *et al.*, 2008: 294).

The findings indicate that children in the Foundation Phase increase their perception of physical competence significantly from T1 to T3 and are important in relation to physical literacy. Perception of physical competence is related to motivation to engage in physical activity. Physical literacy is developed through engagement in physical activity and also contributes to engagement in physical activity. Therefore children's perceptions about their physical competence are an important factor in the development of physical literacy. The pupils' accurate perceptions about themselves indicate growing self-awareness. Accurate judgements about physical competence are unusual for children of this age. This clear self-perception of their physical competence as well as confidence is an important aspect of Physical Literacy. Whitehead (2010:13) states that physically literate 'individuals will have a well-established sense of self as embodied in the world. This together with an articulate interaction with the environment will engender positive self-esteem and self-confidence'

Independence and well-being

Pupils were confident to move in a variety of contexts during all aspects of their learning; Pupils were highly independent in their learning they were confident and enthusiastic and able to make judgments about their own learning and achievements.

Observations using the Leuven Well-Being Scale were carried out to assess the levels of the pupils' well-being during their activities and as such contributed to the assessment of their confidence and independence. Data from the Leuven Well-Being Scale was used to complement the findings from field notes, video and pupil tours in a process of data merging (outlined in Chapter 3). The Leuven Well-Being Scale is scored from one to five with one being extremely low where the child is showing signs of discomfort, is dejected or frightened and five being extremely high where the child looks happy cheerful is relaxed, full of energy, self-confidence and self-assurance (Laevens, 2000). This section reports on data from structured observations, field notes, video and child-led tours (described in Chapter 3). Table 14 shows the scores for observations using the Leuven Well-Being Scale.

A total of 42 observations were conducted across phase two of the study from T1 to T3. Analysis of the data suggests children had very high levels of well-being. Data from the Leuven Well-Being Scale (outlined in Chapter 3) is shown in Table 21. The mean score of 4.0 is very high in relation to previous studies, where large numbers of children have achieved levels of 3.72 (Laevens et al., 2010) and 3.63 (Laevens, 2009).

Table 21: Leuven Well-Being Scale observation scores

| | Total | Score 5 Extremely high | Score 4 High | Score 3 Moderate | Score 2 Low | Score 1 Extremely low | Mean score |
|---------------------|-------|------------------------------|-----------------|---------------------|----------------|-----------------------------|---------------|
| No. of observations | 42 | 11 | 20 | 11 | 0 | 0 | 4.0 |
| % of observations | 100% | 26.2% | 47.6% | 26.2% | 0% | 0% | |

The high levels of well-being were further illustrated by the percentage of observations in each category. Noticeable here was that there were no observations recorded in the low / very low category indicating that the behaviours observed were those of being happy, cheerful and spontaneous. Children were relaxed and did not show signs of tension or stress during their activities (see Appendix G for Well-Being scale). Children who were observed in the high and extremely high categories were showing signs of self-confidence and self- assurance in their learning. If children are to develop and consolidate motivation and confidence as attributes of physical literacy, then the level of well-being observed in their learning is an important aspect for consideration.

Part of the Leuven Well-Being Scale involves qualitative observations. These qualitative comments were also noted which record some of the behaviours that relate to the scores. These are shown in Table 22.

Table 22: Qualitative Comments for the Leuven Well-Being observation

| |
|---|
| Enjoying and discussing the task continuously. |
| Enthusiastic |
| Up and down moving almost continuously |
| Says ‘ miss this is fun’ she is pleased showing Sue her story |
| happy to give an opinion |
| Happy helping with spelling of words in the group |
| dances when get word right |
| Full of spontaneous jumps |
| Happy and focused, relishes the challenge of the game |
| jumps about as he tells his story, smiling and pleased |
| pleased with his story |
| very enthusiastic |

In addition to the Leuven Well-Being Scale data, support for the notion of children having high levels of well-being was found in the qualitative data. High levels of

well-being and confidence were identified in field notes with observations detailing 'children all confident to talk and express their ideas (FNA 2,16), 'their confidence is really high, they seem extremely happy' (FNA 75A 22), 'Stuart stands up and dances – he is so pleased (FNA 76, 3). 'These children are all very comfortable in this environment, they move round in a relaxed confident manner, they are able to move and organise equipment' (FNA 147, 5). The teacher in School B also commented about the levels of confidence telling the children she '(Elan (the teacher)) is pleased with how confident they are all getting in swimming (FNB 197, 11). Confidence was also discussed during an interview with the teacher in School A at T2, who highlights how the children's confidence was linked to well-being:

Confidence-wise I think that comes in tying in with the cooperation, that it all sort of interlinks that they are more confident to be on their own and when they go off on these independent activities it's up to them do they end up doing it on their own do they end up working with a partner, or end up in a group, particularly the construction, quite often that's a really nice one where there is a real choice there and it has been quite noticeable that generally they work in groups there and they've chosen that they chose who's doing it and they are able to negotiate and plan within what they're making, yeah really good..... The confidence ties in with the independence and the cooperation, because you have got to have that inner confidence to be happy to go forward and push yourself forward (TA).

Children also seemed to recognise their high levels of well-being. For example, the children were eager to film tours independently, suggesting that they were confident to work alone and use the cameras without help. The films included video of their friends relaxed and happily playing as illustrated by the film of Aled playing Twister (CTV2), he was laughing and smiling at the camera confidently showing how he could balance on the different colour spots of the game.

Observations from multiple methods, the Leuven Well-Being Scale, field notes, interviews and child led tours all identified how children in the Foundation Phase

were happy and confident in their learning. The complementary nature of the methods explored examples of well-being and confidence in different contexts and from different perspectives. It is particularly interesting to note how the child-led tour picked out friends that were having fun and captured this aspect on film. The teacher highlighted the ability of the children to go off and carry out tasks independently as illustrated by the filming of this tour and the Leuven observation noted scores derived from observing behaviours of happy, smiles, cheerful also identified in the child-led film.

High levels of well-being and confidence were also observed during more focused observation. An academic learning time observation of Aled was conducted during phase two of the study. The observation was an adapted version of academic Learning time observation (outlined in Chapter 3) and enabled an in depth analysis of pupil activity during a task. Observations of Aled throughout the task were conducted every thirty seconds. Ten seconds in every thirty seconds was observed then recorded during the remaining twenty seconds.

Aled had selected tasks from the list given by the teacher. His first choice was to make a pegboard picture of an Olympic logo. The observations of Aled during the task are noted in Table 23.

Table 23: Learning Time observations for enhanced learning activities (Aled)

| Learning Time Observation 10secs in every 30secs |
|---|
| <ul style="list-style-type: none"> • Selecting pegboards • Making pattern with pegs • Making pattern with pegs standing at table • Making pattern with pegs standing uses both hands to put pegs in • Taking pegs out with both hands • Making new pattern with different coloured pegs • Making pattern with both hands singing |

Learning Time Observation 10secs in every 30secs

- Tells me he is making mascots pattern
- Still making pattern talks to Osian who joins him
- Moving pegs around in a pattern to rearrange
- Puts some back chats to Osian whilst doing pegs
- Using mostly right hand to put pegs in
- Picks out with left hand puts in with right
- Walking from Cai to his pegs
- Moving pegs with left hand making Olympic mascot
- Altering picture with both hands- still standing at desk
- Placing pegs with both hands
- Tips all pegs back in box
- Pulling out box from art area and carrying it
- Carrying box to carpet area
- Kneeling on floor choosing model from pictures to make, singing to self
- Making model kneeling on floor
- Making model kneeling on floor humming to self
- Making model kneeling on floor humming to self
- Kneeling, leaning forward and reading construction stuff
- Kneeling, leaning forward and reading construction stuff
- Kneeling, leaning forward and reading construction stuff
- Standing and walking showing Sue his work
- Kneeling making model characters
- Kneeling making model characters - talks a little to Cai
- Stands to fetch reading folder

| |
|---|
| Learning Time Observation 10secs in every 30secs |
| <ul style="list-style-type: none">• Stays to do more model making kneeling on carpet• Kneeling making models on the carpet• Walking to get reading folder goes to read. |

Aled demonstrated high levels of confidence, well-being and independence during the learning task. The observations illustrated Aled's ability to select the activities independently. He initially selected the pegboard, and then when he finished this moved onto the construction activity. He was noticeably happy, and sang and hummed to himself. Although he moved around and talked to other pupils, he remained on task and without prompting from the teacher continued until he had completed the first task. Once he had finished the first activity he put the resources away. He collected and set up the second activity, which, as before, he did independently. The high level of independence shown by Aled throughout this observation was also noted throughout the field notes as a striking feature of pupils' learning in the Foundation Phase in both schools. Reflections recorded in the field notes highlighted high levels of well-being, confidence and independence of the children: *'The atmosphere was lovely – children all happy and confident, I had to remind myself they were year one, they are so independent in their learning'* (FNA 34, 20). Another example of the children's confidence and independence was observed when it was time for them to have their class council meeting in School B. Most noticeable was the fact that the children ran the session themselves with some limited support from the teacher. She reminded them at the start how important their opinions are for the school:

Elan (the teacher) reviews all the things that the school council has done in response to class councils, so the children can hear how their views count. One of the pupils is chair and one is secretary. Llion is chair, he chooses who will speak. He declares the meeting open. Rhys wants a football pitch in the small playground. Johnny thinks this is a bad thing as it is concrete. The children are shown they need to say if they agree or

not first, then say why. Llion manages this well - choosing people. The children are having good discussion relating to football on the playground. The meeting was really good the children decided they wanted quiet areas outside in the playground (FNB 88 - 89).

The children's well-being is particularly interesting when considering the role of physicality in the pupils' learning, as Whitehead (2010:33) highlights self-respect and self-confidence are acquired through 'the deployment of embodied potential'. If as previously noted the data suggests that active play-based learning experiences are contributing to pupil's well-being and self-esteem and impacting positively on children's confidence and independence then this is significant for the Foundation Phase with its underpinning philosophy of well-being at its core (Maynard, 2007). In particular it is clear to see how a curriculum that develops well-being contributes to children's physical literacy, which as a concept values 'the well-being of every individual as a unique person worthy of respect' (Whitehead, 2010:18).

5.2.2 Key Finding 2. The foundation Phase is an inclusive learning environment for pupils with a range of needs.

5.2.2.1 Autonomy in the learning environment ensured inclusion of ALL pupils

This section explores the nature of the Foundation Phase as an inclusive learning environment for pupils with a range of needs.

During observations it became apparent that there were several pupils for whom learning in a mainstream class would have been a considerable challenge. Two case studies were observed that illustrated this, Cai and Josh. Cai was a pupil identified with emotional and behavioural difficulties whilst Josh was a child on the Autistic spectrum. Both pupils were identified by their schools as having additional learning needs. Cooper (2008) highlights how certain approaches to schooling can contribute to disaffection. However, what was apparent from the data in this study

was that in both schools, pupils might be expected to become disaffected due to their challenging additional learning needs were in fact experiencing high levels of engagement in class activities and success in their learning. The two examples of children with unique learning needs are provided below as evidence to support the idea that such children are engaged in their learning during the Foundation Phase.

Example case study one – pupils with emotional / behavioural difficulties:

The first example was Cai, a pupil in School A with emotional and behavioural difficulties. He was a 'looked after child' living with foster parents. Cai often appeared to be on the edge of poor behaviour. As a 'looked after child' he was no longer with his family although he did have a sibling living with him in foster care. Masten and Caotesworth (1998:209) suggest that 'rejected children are typically aggressive' explaining that they 'appear to process social information in maladaptive ways' leading to negative defensive behaviours or pre-emptive strikes against peers'. Cai was often aggressive in his interaction with his peers as noted in field notes throughout the study: '*Cai finds it hard to conform*' (FNA 125, 22), '*Cai hits Tomos when no one is looking, he seems to be spoiling for trouble*' (FNA 66 15). It was as if he was looking for ways to get into trouble. Field notes identified how he '*puts the wrong game on the ipad and has to change it*' (FNA 10 16). On another occasion '*Cai snatched a board from Sarah*' (FNA 33,17). On one occasion he had to be removed from the activity, '*Sophie has to bring Cai out of his maths group for disrupting his group and the lesson*' (FNA 104, 1). The emotional issues he had to deal with were extreme and the foster carers contacted the school to keep staff informed on days they should expect extreme behaviour. Despite all of this many of the observations noted that Cai was engaged in his learning, focused and on task. This was particularly striking on a day when field notes identified Cai had left home in an emotional state; '*Sophie and Sue are expecting a tough day as his guardian has phoned to say his brother is being picked up early so he may play up to be sent home* (he was kicking and screaming getting into the taxi to come to school). *However he is enjoying the activity with Peter and seems totally absorbed in this*' (FNA 125,22).

The structure of the Foundation Phase, with the opportunities for the children to choose their activities seemed to allow Cai to select activities that engaged him, as opposed to activities being imposed on him that he might have seen as having no relevance or significance, a factor in many schools that contributes to disaffection (Cooper, 2008). This was evident on this particular day when even though there was an expectation of poor behaviour, he and Peter were able to select their activity and, as the field notes highlighted, he was able to focus his attention in a positive learning experience:

'Cai and Peter have the Bee-bots on the floor. They seem to be really enjoying getting them to move about – they make up a game with winning lines. They are not programming them and using them correctly – but just laughing and having fun' (FNA 125, 15).

Noticeable here was that there was no intervention from the staff to tell them to use the Bee-Bots in the correct manner. They were left to carry on with their game, thus avoiding the confrontational emphasis on discipline that Cooper (2008) suggests increases disaffection. In most situations intervention would have been expected from the staff to ensure pupils were using the Bee-Bots in the correct way. However, later on the field notes observations illustrated how the initial lack of confrontation had resulted in continued engagement and eventually correct programming of the Bee-Bots.

'Peter and Cai stand up the flags to make a course' (FNA 126, 9). At one point the teacher calls Peter to complete a task with her *'leaving Cai to play alone with the Bee-bots – he is still engrossed and has made houses for the Bee-bots and sings and hums to himself as he plays – he calls to Peter to see and is smiling broadly, he tells the Bee-bots "time to come out cars" and talks to them as he programmes them to move - he sits cross-legged and moves around in a cross-legged position. Osian shows me his work and then joins Cai with the Bee-bots'* (FNA 127, 1).

Here there was clear evidence of the behaviours that Leavers (2000) associates with involvement, high levels of engagement and also high levels of well-being. It is also interesting to note that without any intervention from staff at all, Cai ended up programming the Bee-bots correctly and therefore having opportunities to develop his IT and mathematical concepts. Later comments in field notes highlighted a conversation with the teacher who was also pleased with Cai's ability to focus, particularly on a day that was emotionally challenging for him.

'We discuss Cai and how well he has focused – he was very focused yesterday playing with the stones. He was kicking and screaming coming to school today...he appears VERY happy now playing with Osian and lying on his tummy. Cai goes into the reading corner extending the game further, he collects flags to make the game in there' (FNA 127, 17).

Choice here is a key factor in the motivation and engagement, as Deci and Ryan (2000:231) suggest 'autonomy concerns the experience of integration and freedom and is an essential aspect of healthy human functioning'. An example of this choice in the learning was demonstrated with Cai selecting tasks from a list of activities planned by the teacher. Table 24 shows the Academic Learning Time observations (outlined in Chapter 3) of Cai.

Table 24: Learning time observations (Cai)

| |
|--|
| Learning Time Observation 10secs in every 30secs |
| <ul style="list-style-type: none"> • Squat on one knee making model on carpet • Picks up 'structions' says they are tricky • Sitting on carpet holds box • Standing by table getting peg board • Sitting at table using right hand to put pegs in • Sitting watching boys making models – leaning over back of chair |

Learning Time Observation 10secs in every 30secs

- Sitting quietly looking around the class
- Putting pegs in peg board using right hand
- Putting pegs in peg board using right hand, talking to self says colours in the pattern
- Cai stands says needs loads of beads and lifts out handful of pegs
- Looking at photos of other peg pattern
- Looks into space, sounds out word then puts in pegs
- Putting in pegs right and left hands
- Using right hand saying colours in pattern to self
- Using right hand saying colours in pattern to self – sees Stuart drops beads and says so swinging on chair
- Tips out tub of pegs on desk and carries on
- Swinging on chair looking around
- Talks to Sue and explains his pattern
- Rocking on chair chewing collar and watching Stuart
- Chews collar stands and leans across table to Stuart then puts more pegs in
- Standing reaching pegs from peg tray
- Puts random colour in pattern and talks to self
- Back to red white and blue then flicks pegs across table
- Standing putting boards on the photos to cover the patterns
- Standing watching Chris make a model
- Walked over to Osian to talk about his model
- Sitting back down doing pegs
- Sitting back down doing pegs saying colours to self
- Swinging on chair talking to Osian and watching models
- Swinging on chair talking to Osian and watching models and

Learning Time Observation 10secs in every 30secs

laughing

- Swinging on chair talking to Osian and watching models
- Back making peg patterns saying colours to self uses right hand
- Sitting making pattern head resting on left hand
- Watching model making smiling as they act out a story
- Watching model making smiling as they act out a story
- Sitting as if in a trance watching the boys with stones and models
- Sitting one leg up on chair watching Aled
- Back doing peg patterns saying colours to self
- Walking with peg pattern to show Sue
- Standing talking to Sue
- Standing with Sue for photo of pattern
- Walking with pattern to put back in box

Of note in this observation was that at no time was he told off or told to sit down and get on with his work. There was no confrontation and he was allowed to drift off-task and then return to task in his own time. Rogoff (2003:211) highlights the importance of this noting that 'children are more active and equal participants when teachers use non-controlling talk and increase the amount of time for children to respond'. This approach resulted in completed work (and a proud photograph) and this ability to be able to stick at a task develops the mind-set of perseverance which is an important life-skill (Dowling, 2013; Dweck, 2006; Robinson, 2009). The teacher behaviours that allowed pupils to have these levels of engagement are discussed in depth in Chapter 6.

Also of interest was how the other pupils responded to Cai, who at times was aggressive towards them. Despite this aggression they seemed to want him to be good and stay out of trouble, often highlighting to the staff when he had tried hard

and been kind, *'Aled tells the teacher how Cai did a really kind thing at lunch time'* (FNA 179, 16). On another occasion *'Sue (the teacher) praises Cai for helping to tidy – she emphasises how they all tidy but sometimes Cai hides- the children agree and say sometimes he hides behind them, they seem pleased to see him praised'* (FNA 147, 11). This was also demonstrated when *'the class say he (Cai) should have a kindness sticker, Katy gives him a hug, Cai is pleased'* (FNA 131, 13).

It was surprising how well Cai was able to play with his peers, during an observed session where pupils selected activities. *'Cai and Jo move to the stones to sort'* (FNA 106, 14). The task soon developed into a game and *'Cai and Jo work carefully together to build a tower of stones'* (FNA 107, 1) *'Jo wants to build a garden – they discuss the garden and are busy chatting together about the task'* (FNA 107, 7). A Social Play Continuum observation was carried out for the activity (outlined in Chapter 3). This identified Cai and Jo as playing in the co-operative domain, sustained related dialogue with the theme emerging and Jo and Cai having a shared understanding of the goals. There was highly imaginative use of ideas and materials as play themes were taken on board and explored (SPC 3).

Video footage of this session (V9A) highlighted how they both remained on-task and explained to other children who showed interest what they were doing. Holland (2003) suggests that imaginative play may promote emotional intelligence and reduce aggression, particularly significant for a child with emotional and behavioural issues. Broadhead (2006:202) highlights that *'when children are able to operate within the cooperative domain and when they play with others who manage in this domain effectively, even if an individual may not yet do so her/himself, they are functioning intellectually and socially.'*

Example case study two – a pupil with Autism: The second example of engagement in learning for a pupil with additional learning needs is Josh in School B. Josh had been diagnosed as autistic; he was new to the class and had a one-to-one teaching assistant. Josh arrived in the class between T1 and T2, and when he arrived he had a

'1:1 support to complete his work' (FNB 50, 6). He worked a lot with his teaching assistant, often in the corridor to be away from noise, he *'needs constant support to stay on task'* (FNB 50, 9). However, over time the play-based nature of the Foundation Phase appeared to enable Josh to be part of the learning sessions that involved choice and play in a way he was unable to in a more structured setting. Field notes highlighted an occasion when, although he was not playing with his peers, he was alongside them and was able to sustain play in the classroom with everyone else. *'During this planning time (free choice) he is able to lie on the floor and play as a very young child - he focuses on a small Lego man and plays alone on the floor making noises -- engaging with the teaching assistant just to take the Lego bricks. He seems very happy to play alone and focuses on the Lego man'* (FNB 91,6). The play interactions were not at a similar level to the other pupils, and the Social Play Continuum Observation of Josh placed him in the associative domain. The observation identified behaviours of: *Parallel play period. Self-talk. Self-talk not eliciting response. No dialogue. Very little eye contact. Seemingly little regard for the proximity of peers Limited periods of peer interaction (SPC1).*

Josh's interaction with pupils was not always within the associative domain, and at times later in the study, between T2 and T3, he displayed some of the characteristics of social play with simple interactions with other children during the playing of a maths game using Numecon, *'Rhys, Llion and Josh work together, Rhys helps Josh and says "well done Josh". Elan (the teacher) praises him (Rhys) for being kind and reminds them not to tell him (Josh) the answers as he can do it. Josh gets up; Llion calls him back and says it is his go. Llion and Rhys praise Josh they help him saying 'it might be'....when he gets it right they say high 5 and Josh manages to do high 5 with the boys'* (FNB 209, 1).

Further observations in field notes highlighted how the play-based nature of the activities appeared to reduce stress for Josh as he was able to move in and out of group situations, *'the group is Carter and Nicole, Enfys and Caryl, Llion and Rhys and Josh, Tom and Emrys. Josh is able to move to another pair and watch - there is no*

hassle – no reaction from the children so no disturbance, he comes back to Rhys and Llion and then gets on. Llion gets a drink of water from his bottle (the water bottles are all available on the worktop) Rhys has waited for Llion as it was his turn. Josh’s teaching assistant returns and works with him. These play sessions enable him (Josh) to be in the class with all the others’ (FNB 93, 2).

Noticeable here was that Josh had the opportunities to have some play with his peer group at a level that he was able to determine. As Seach (2007) points out, ‘for children with autism it is vital that they are able to experience the joy of play that is not dependent on fixed activities but is about discovering new and exciting ways of being with others’. These opportunities afforded by the play-based nature of the Foundation Phase are particularly significant as ‘for children who have autism, play is often represented as a skill to be learned rather than an experience to be shared and enjoyed. As a consequence they may not be given the same play opportunities that enable them to express themselves and gain mastery over their thoughts and experiences’ (Seach, 2007: xiii). Embodiment is also particularly significant for children with autism, as it is through the multisensory embodied experience of the world that children develop awareness of the ‘body self’ (Jennings, 1999). Seach (2007:3) suggests ‘origins of self and identity are rooted in the emotional states created by young infants’ innate ability and their interaction with people and the environment’, which are key aspects of physical literacy. Gallagher (2005:232) suggests there is a relationship between the development of interpersonal skills and motor skills due to less effective mirror neurons, being of particular relevance to autism stating that ‘a subject’s understanding of another person’s actions and intentions depends to some extent on mirrored reverberation in the subjects own motor system’. If this is the case then opportunities for movement and interaction with peers may be of great importance particularly for children with autism.

The ability to have successful social interactions during play, as highlighted here for Cai and Josh, could be deemed to be highly significant. Successful interaction with peers in social situations and the ability to utilize positive social skills is seen to

reduce the risk of behavioural and emotional problems in later stages of development (Howes, 1987; Garnezy, 1991). Astington and Jenkins, (1995) link the development of theory of mind (ToM) and play to the development of socially competent behaviour in children. For many children with additional learning needs, social interactions and the ability to understand and predict the behaviour and feelings of others (identified by Ashington (1993) as theory of mind), is something that they find highly challenging (Newton and Jenvey, 2011). Holland (2003) suggests imaginative play might diminish aggression levels and promote emotional intelligence. The importance of self-awareness, body-awareness, and the good core stability required for the perceptual ability to read non-verbal cues are all aspects of physical literacy that the broad play-based learning opportunities of the Foundation Phase appear to be affording all pupils.

The two examples of pupils with unique learning needs discussed in this section highlighted how the autonomy supportive climate of the Foundation Phase enabled them to engage in their learning. Analysis of the data suggested that despite them having needs that are often challenging in an educational setting, they were able to have the freedom to engage in tasks at an appropriate level and contribute as valued members of their class.

5.2.3 Key finding 3. There is a positive relationship between pupils' physical competence and pupils' intellectual development

This section explores the development of pupils' wider learning in the Foundation Phase, in relation to their intellectual development. The data demonstrated that pupils were making good progress in their academic performance and in many cases were ahead of expected levels of achievement for their ages. Analysis of the data suggested a positive relationship between pupils' physical competence and their intellectual development and the key findings in this section are listed below and then explored further in relation to the data in the following discussion.

- The majority of children had a mental age score above their chronological age.
- There was a significant correlation between motor competence scores and mental age scores (BOTSS $p=.001$, GMQ $p=.008$)
- The majority of pupils had a reading age and a spelling age above their chronological age.
- Analysis of reading tests showed significant improvement between T2 and T3.
- The majority of pupils had high levels of achievement in maths scores.
- PASS¹ scores show very high scores for self-worth and confidence, preparedness for learning and for response to learning.

The majority of pupils had a mental age score above their chronological age

The Goodenough Draw-a-Person Test was administered to the children in both schools between T2 and T3 (outlined in Chapter 3), which gave a mental age score for each pupil. This was compared to their chronological age. All pupils in School A and all except four in School B had a mental age above their chronological age as measured by the Draw-a-Person Test.

There was a significant correlation between motor competence scores and mental age scores.

Pupils' mental age scores had a significant correlation to their motor proficiency as measured by the BOT2 and their motor development as measured by the TGMD2. A Pearson rank correlation was conducted between mental age and motor test scores at time T3. Table 25 shows correlation and significance.

¹ PASS - Perceptions about self and school assessment (as outlined in chapter 3)

Table 25: Pearson rank correlation between mental age scores and BOTSS and TGMD2 GMQ

| | Mental age correlation | Mental age significance |
|-----------|------------------------|-------------------------|
| BOT2 SS | .693 | $p=.001$ |
| TGMD2 GMQ | .601 | $p=.008$ |

The majority of pupils had a reading age and spelling age above their chronological age.

School A reading test carried out at T3 showed ALL pupils had a reading age above their chronological age. All children except one had a spelling age above their chronological age. School B reading test carried out at T2 showed only five pupils in the class below their chronological age. Examples of pupils' writing also demonstrates clear well-written independent writing for the majority of pupils, despite the lack of formal writing instruction and the lack of pressure on pupils to be able to write independently at this stage of their development (see appendices J and K).

Analysis of reading tests showed significant improvement between T2 and T3.

The data was drawn primarily from the schools' own data set and so was not generated specifically for the purpose of this study. Therefore the school reading tests, spelling tests and mathematics test results were administered at different times in the two schools, some at time T2 and some at Time T3. School A completed reading age, spelling age, maths snapshot and PASS at T2. School B completed spelling age, reading age maths snapshot and PASS at T2. School A also completed a spelling age and maths snapshot at T3. Correlation between these academic scores and motor competence scores were found to be non-significant. However it is interesting to note that there was a significant increase in reading age scores in School A measured at T2 and then again at T3. A paired sample T-test was conducted for the reading age scores at T2 and T3 and the improvement was found to be significant ($p= .014$). The increase in motor competence scores at this time

between T2 and T3 was also found to be significant as reported previously in this chapter.

The majority of pupils had high levels of achievement in maths scores.

All pupils except one had reached the expected level one on the maths assessment. Maths scores were measured at T2 by “snapshot”, the schools’ assessment tool in both School A and School B. In addition eighteen pupils achieved level two or above² on the ‘snapshot’ assessment, which is not an expectation until the end of the Foundation Phase. For these eighteen pupils their maths achievement was therefore a year ahead of the expectation at this stage of their education.

PASS scores show very high scores for self-worth and confidence, preparedness for learning and for response to learning.

Children had high scores on the PASS assessment, which was conducted by both schools at T2. This test assesses amongst other things the pupils’ readiness for learning. School A used a reading intervention known as accelerated literacy between T2 and T3. The head teacher and staff at the school had specifically selected this time as children progressed into year two as at this time the children were deemed to be ready for the higher cognitive processes required for reading. It should be noted that previously the school attempted the intervention in year one and found it to be less effective.

Goddard Blythe (2005:95) highlights how the ‘various parts of the brain pass through optimum times of learning readiness’ and that it is between six and a half and eight years of age that a ‘major period of myelination takes place, in which connections between vestibular system, the cerebellum and the corpus callosum are strengthened’ (p101). This time of making connections and myelination makes the brain ready for learning and it is a possible explanation for the significance ($p =$

² The Foundation Phase has no level assessments but instead has outcome judgements, the snapshot level 2 is the equivalent of outcome 5- the expected outcome for the end of the Foundation Phase.

.014) in the increase of the pupils' reading ages in the short time (four months) between T2 and T3. Exercise has been identified as having an impact on cognitive development (Ratey and Hagerman, 2008; Cotman and Bertchtold, 2002; Hannaford, 2005). The correlation between motor scores and mental age shown in Table 18, supports previous research that has suggested a relationship between movement competence and cognitive development (Jandling, 2003; Goddard-Blythe, 2005:163). If children have improved motor scores, it would suggest that they are having many opportunities for experiencing movement, and data in this study demonstrated the lack of sedentary behaviour by the children (as previously outlined in this chapter). Movement is crucial for brain development, with sensory experiences stimulating neural growth and exercise increasing levels of brain-derived neurotrophic factor (BDNF) and neurotrophins such as dopamine which increase nerve growth and 'improve learning and mental performance' (Cotman and Bertchtold, 2002: 295; VanPragg *et al.*, 2002). The importance of early movement in particular has been supported in relation to academic performance in the recent Millenium cohort study where there were significant links between delays in cognitive development and delays in gross motor development (Hansen *et al.*, 2010).

These findings show pupils achieving good levels in their academic performance in line with national curriculum expectations and above. The findings indicate that the play-based nature of the Foundation Phase with less sedentary formal learning does not impact negatively on academic performance. This data appears to support the literature, which suggests a good foundation of movement and sensory learning is needed for brain development, highlighting that embodied experiences develop the whole being. The links between physical competence scores and cognitive scores support the underpinning philosophies of monism and phenomenology that are central to physical literacy. Philosophies that advocate the notion of embodied learning and a recognition that 'you have not "got" a body but rather "are" your body' (Whitehead, 2010:23).

5.3 Conclusion

This chapter reported the findings from phases two and three of the research. The results of the data analysis in phases two and three identified three key findings:

1. The Foundation Phase makes a positive contribution to the attributes of physical literacy.
2. The Foundation Phase is an inclusive learning environment for pupils with a range of needs.
3. There is a positive relationship between pupils' physical competence and pupils' intellectual development

This chapter, in answering research questions, two, three and four sought to find out if learning outcomes were being achieved in the Foundation Phase in the two schools and the processes involved in achievement, in particular relating to the pupils' behaviours. The findings indicated that the play-based nature of the Foundation Phase encouraged movement throughout pupils' learning in all areas of the curriculum, which may account for significant improvements in motor development. Consistent use of the outdoors by the pupils encouraged a lack of sedentary behaviours, high levels of engagement and high levels of well-being. The autonomy that pupils had in their learning ensured that all pupils had opportunities to succeed in their learning and work alongside peers. The embodied nature of learning in the Foundation Phase enabled opportunities for the types of varied multi-sensory experiences required for the effective myelination that is essential for learning.

Much of the data reported in this chapter highlighted pupil behaviours in response to tasks and the environment. The following chapter will focus in more depth on the learning environment and the teachers' role in the creation of that environment as well as focussing on the tasks that enabled the pupils' achievements and the contribution of the Foundation Phase to the development of physical literacy.

Chapter 6 - Teacher behaviour and the learning environment

The purpose of this chapter is to report findings from phase two of the research that address research question three. Research question three asked ‘what processes might be impacting on the achievement of the learning outcomes?’ In identifying the processes that have taken place, this chapter will analyse the implementation of the Foundation Phase curriculum in the two schools in the study. Phase one of the research identified the key features and learning outcomes of the Foundation Phase and this was reported in Chapter 4 of the thesis. Phase two of the research explored if the learning outcomes were being achieved and the processes that contributed to achievement in relation to the pupil experience, this was reported in Chapter 5 of the thesis. Further aspects of the processes that contributed to the achievement of the learning outcomes are explored in this chapter in relation to the teacher behaviour and learning outcomes.

This chapter will explore the factors that enabled teachers to enact policy in the context of the school and critique the extent to which there was congruence between the original vision of the Foundation Phase and practice in schools, in effect assessing the fidelity of the implementation. In order to do this it will explore how the key features identified in phase one of the research (reported in Chapter 4) were being implemented in the structures, school policies and practices enabling the successful implementation of the Foundation Phase in these schools. This is of particular interest when considering the low levels of prescription associated with the Foundation Phase (highlighted in Chapter 4) and the issues surrounding curriculum change in the existing literature (discussed in Chapter 2).

The first section of this chapter analyses data and reports the findings relating to the school structures, policies and practices. It identifies how the key features of the Foundation Phase were evident in both schools throughout the whole of phase two of the research and considers the fidelity of the implementation in relation to the aspects highlighted in this chapter. The second section of this chapter analyses the school ethos, classroom environment and teacher behaviour in both schools. The third section of the chapter analyses the acknowledgement of the embodied dimension and movement in the children's experiences in the two the schools.

6.1 Structures, policies and school practices

The school and the 'school curricula impart deep rooted cultural values and as such, have tremendous power to shape the consciousness of young children' (Bresler, 2004:127). 'Humans change through their changing participation in the sociocultural activities of their communities, which also change' (Rogoff, 2003:11). In order to understand the children's development in the Foundation phase we need to understand the 'cultural nature of everyday life' (Rogoff, 2003:10) and explore what it is about the environment and practices of the schools that is enabling the Foundation Phase to contribute to children's physical literacy and their wider learning. Walsh (2004:97), in his study of Japanese early years settings, noted how 'in Japanese culture young children are viewed as essentially and importantly physical – their physical development is central to early schooling.' It is apparent in his observations that the value placed on physicality in the culture is reflected in the ethos of the schools and thus in the behaviour of the teachers.

6.1.1 Play-based active learning and the use of the outdoors

It was apparent that, as with Walsh's (2004) experience, physicality was highly valued in the culture of the two schools in this study. The key features of play-based active learning and the use of the outdoors for learning were both clearly evident and pupils were highly active in their learning, both physically and in terms of their engagement with learning tasks as was identified in the previous chapter (Chapter

5). A reduction in the amount of time sitting at desks was explicit in the approach from the outset as explained by the advisor from the LEA

One of the very first things we did in the Foundation Phase was to take away all except one table and four chairs in every classroom, so we were encouraging children from day one to move around the room freely to move outside, every classroom has a door that leads to the outside, we were encouraging always at least a quarter of the class outside for every session and with less tables and chairs you cannot have that structured learning where everyone is sitting around. We wanted to throw worksheets out of the window and we also wanted to throw out of the window the opportunity for children to sit at a desk all day (LA1).

The physical environment of the schools encouraged movement as well as the organization of the curriculum and the use of the outdoors. In phase one of the research the teachers from both schools highlighted how *'there is a huge emphasis to be physical and active in the indoor and outdoor environment, especially the outdoors, they haven't got a choice they have to be physically active'* (T2 120) *'they have daily outdoor time, doing lots of subjects outdoors not just the PE'* (T9 49). Walsh (2004:106) identifies in the Japanese schools that playgrounds were 'elaborately equipped, not only with climbing structures and slides and so on, but also with unicycles, bicycles, tricycles, shovels, stilts, gymnastic equipment, hoses, troughs for diverting water, buckets, tools and so on.' This obvious value placed on movement and physical experiences was similarly seen in the Foundation Phase settings where the developments in the school grounds showed how head teachers and governors were investing in opportunities for children to be active.

School A invested in outdoor climbing equipment for the Foundation Phase and a trim trail for the whole school (V11A a, b, c). ESTYN (2011:7) identified the effectiveness of the outdoor areas in the school, which *'provide opportunities for a*

good range of activities'. School B also had climbing equipment in the Foundation Phase areas, and had built an extensive climbing and adventure structure on the grounds (Appendix A)(V11A d-h). ESTYN identified the environment in this school as *'excellent', 'investing in an extensive range of high quality outdoor equipment'* (2012:7). The two schools demonstrated the value placed on physicality in school prospectuses for parents, *'...we put great emphasis on giving all children the chance to be active and achieve regardless of their ability.....As a school we recognise the importance of physical development'* (School A, prospectus 2012:11), *'We include activities which offer a challenge to the child's initiative, courage and determination'*(School B prospectus 2013:12).

The structures and developments in the grounds were accompanied by a vast range of smaller equipment, space hoppers, skipping ropes, balance boards, wheelie trays, stilts, bikes and trikes, balls bats, hoops, and a range of games equipment, available to the children during their playtimes, and also during choice sessions in curriculum time (V8A). Playtimes were extremely active with markings, zoning of the playground and the variety of equipment encouraging a range of activities as highlighted in Video footage from playtime in school A, *'Children are moving everywhere, playing on space hoppers in a group hopping down the slope of the yard. Children play skipping games and jumping games. Hop on balancers and traverse along the climbing wall. Children are playing chasing games and circle games. Some playing with hoops alone, others playing tennis type games. Children go into the shed and help themselves to equipment or put it away'* (V8A)

Beyond the developments in the environment, it was the attitudes of heads, staff and the importance they placed on physicality that also transmitted values to the pupils. This was apparent in interviews where the importance of physicality was clear as expressed by the deputy head in school B; *'We do a lot of PE we have a games session once a week, PE, swimming, Forest School stuff, gardening, that physicality and being out in the air having a purpose and reflecting on what they have done, has been fantastic for them'* (DH). This valuing of holistic learning from heads and deputy

heads transmitted to the staff as one of the teachers commented *'it's not being told it's not just listening they should experience everything because that's how you learn and I think I learn that way I have to do something so I think that the children should have all the experiences I don't think they should be sat I don't think that they should be told'* (T1, 38). Staff in both schools valued movement as integral to children's learning, as another teacher explained; *'I see it as a way of developing skills in a really interesting stimulating environment that includes a lot of movement, because it is the natural thing to do from birth. It allows them to understand their space their world, they can't do it 2 dimensionally, they need to feel touch explore, they are natural climbers, it's about being active, not abandoning all formalities. It's an active curriculum really.... Before Foundation Phase came in physical development was seen as isolated, I have brought in a lot more movement into my teaching'* (T8, 23, 83).

Extra-curricular activities and whole school events reinforced the high value put on physicality. The schools had many sports and activity clubs, football, tag rugby, netball, hockey, yoga, eco club, 'fun with friends' activities, and surfing. As well as these activities the schools both had residential weeks at outdoor centres and had developed Forest Schools sites as highlighted in school brochures. In recognition of the Olympics, School A held a beach Olympics for the whole school where the older children, with help of teachers and parents, set up activities on the local beach and the whole school rotated to complete all of the activities (V6A a-c).

6.1.2. Focused adult-led sessions and child-initiated learning

The findings in the previous chapter also highlighted the key features of focused adult-led sessions and child-initiated learning. These features were clearly evident in both schools throughout the study from T1 to T3. Teachers had planned learning activities that were in essence taught lessons, as well as opportunities for pupils to plan and direct their own activities. It is widely accepted that children do not learn all the skills they need without guidance and support of adults or peers who can facilitate the next step and ensure appropriate challenges to move learning forward, expressed in the concept of the zone of proximal development (Moore, 2012;

Stodden *et al.*, 2008; Vygotsky, 1978). Although the Foundation Phase is a play-based curriculum, as highlighted by the first key feature, it still retains structure and has adult-led learning. The schools ensured that there was still a system of planning and identified assessment opportunities for pupils' learning. In line with school policies there was a clear planning format, as shown in Table 26, where the teacher had identified learning outcomes linked to the Foundation Phase Continuum and key skills from the skills framework that would be developed through the learning activities. The range of learning and teaching activities, differentiation and resources used can be seen in Table 27 along with assessment for learning opportunities in Table 3. The teachers planning showed how clear activities and assessment for learning were planned to ensure that pupils progressed.

Table 26: Planning form for physical development focused session



| Learning Outcomes from Foundation Phase Continuum | Skills from the skills Framework |
|--|---|
| 4.1 Demonstrates control in travelling in a variety of ways e.g. run, walk, skip, move forwards, backwards, quickly, slowly |  |
| 4.2 Can link actions together | Communication Presenting information and ideas |
| 4.3 They listen and respond readily to instructions. | |
| 4.3 They play and move in a variety of ways, developing their performance of simple skills, first alone and then with a partner. |  |
| Cross curricular link – creative development 4.3 They express their ideas through movements which vary in shape, rhythm and form of travel using different body parts, moments of stillness and held balances. | Thinking developing ideas |

Table 27: Teaching and learning activities

| Teaching and Learning Activities, Differentiation and Resources AFL strategies to be used. |
|--|
| <p>Recap ‘what is creative movement’? can the children remember the goods points of one another’s performances?</p> <p>Play the music to the children – ask them what the music makes them think of. Explain to the children that we are going to go on a treasure hunt through the countryside. What movements could we use in the different areas?</p> <p>Introduce the children to the different areas of the treasure hunt – swamp, rope swing, rickety bridge, long marsh land, hiding behind trees.</p> <p>Discuss ‘where’ and ‘what’ aspects of creative movement – levels and travelling.</p> <p>Play huggy bears to get the children into groups of 5. Send the groups to the different areas. Play the music and allow the children to experiment with the different movements for each area. Select children to demonstrate to the class their examples of interesting and creative movements,</p> <p>Differentiate with levels of support.</p> <p>Labels for different areas, creative movement cards, music</p> |

Table 28: Assessment for learning and next steps

| Assessment of Learning. Next Steps All staff to stick relevant post it observations here. |
|---|
| <p>Do the children demonstrate control in travelling in a variety of ways e.g. run, walk, skip, move forwards, backwards, quickly, slowly?</p> <p>Can they link actions together?</p> <p>Do they listen and respond readily to instructions?</p> <p>Can the children play and move in a variety of ways, developing their performance of simple skills, first alone and then with a partner?</p> <p>Can the children express their ideas through movements which vary in shape, rhythm and form of travel using different body parts, moments of stillness and held balances?</p> |

Observations of the planned physical development session (outlined in Tables 26, 27 and 28) highlighted how the teacher focused on aspects from the planning.

Comments in field notes highlighted how pupils *'recap ways of moving – building on fundamental movement concepts – spatial aspects, direction and levels'* (FNB 114, 10). The teacher questioned them as identified in the planning and *'reminds them to use different body parts'* (FNB 114, 14) to vary their travelling. The *'children are generally using a variety of movements, Elan (the teacher) stops the music to ask children to show others ideas- she reminds them about using levels'* (FNB 115, 1).

As evident in the planning, the focused sessions took place in all areas of learning, not just physical development, and were highlighted in field notes when pupils were learning to write story maps, *'The class get into a 'cylch' (circle) and sit on the floor to practice a story...The story has actions... The children discuss the task of making a story map of the story. 21 children all in a circle attending to Elan (the teacher) making a rough sketch story map...they joke about Elan's drawings and discuss symbols for 'once upon a time' and 'tomorrow' and 'said''* (FNB 157-159).

Whole class situations were used to reinforce and consolidate learning, as well as the modeling of new learning such as the story map. Further scaffolding of learning was demonstrated in focused review sessions where *'children all come to the carpet to review and practice sounds – 'oo'. Elin goes to write it on the board. Elan (the teacher) scaffolds the spelling ... 'there are two sounds that go together to make this sound'* (FNB 162, 14)

Small groups also worked in focused adult-led sessions supported and led by teaching assistants as well as the class teachers such as maths where the teaching assistant worked with one group *'using Numecon and whiteboards. They sit / stand at the table and make numbers on their whiteboards using the Numecon'* (FNA 100, 10) and the teacher works with another *'doing tens and units in numbers. They warm up on the board, recap numbers of tens and units in a number'* (FNA 100, 11). Even though the activities were focused and adult-led they were playful and featured many of the cues that children associate with play, such as not being at a desk and being physical (Howard, 2002) as identified in findings in the previous chapter.

Of note here is that the key features were evidenced in similar ways in both schools. Guidance for the implementation of the Foundation Phase as identified in chapter four demonstrated the government's aim 'to reduce prescription and give control and responsibility back to schools and to learners themselves' (DCELLS, 2008b:7) so that there is 'flexibility in planning' (DCELLS, 2008b:7). It would appear that despite this flexibility for implementation, the high levels of support identified in the two schools from senior management as identified in chapter four alongside the structured training programme from the Welsh Government and consistent messages and support at an education authority level (also identified in Chapter 4) resulted in the teachers being clear about the nature of the Foundation Phase. Teachers also felt competent to implement it with fidelity (Gros *et al.*, 1971) to the original aims of the policymakers as can be seen by evidence of all the key features of **play-based active learning, focused adult-led sessions, child-initiated learning, and use of the outdoors for learning** within both schools in the study.

6.2 School ethos, classroom environment and teacher behaviour

As well as both schools demonstrating the key features of the Foundation Phase as identified in phase one of the research, a striking feature, also evident in both schools, was a whole school ethos of mutual respect. It was clear that there was a high level of trust placed in pupils allowing them independence moving in and around the schools. Pupils unaccompanied by adults often used the communal spaces in the schools, such as corridors and entrance foyers whilst on errands or collecting resources. Observations from field notes and observations written as inter-rater reliability observations (as outlined in Chapter 3) highlight these features noting; *'calm atmosphere, helpful children, smiling children. Busy corridor – lots of movement of staff and children (unaccompanied)'* (IR2), *'busy, productive, calm happy, bustling at times- reading groups using the bean bags and sharing books. Groups walk around in a purposeful way...children come out of classrooms to use toilets independently. Children are able to access and use the photocopier on errands, children access books independently'* (FNA 220, 8) *'the children are treated with real*

maturity and respect as responsible and trustworthy – they really respond to this'
(FNB 165, 10)

The importance of the climate or ambience of an environment has been highlighted by Hadyn-Davies (2010:166) when identifying learning and teaching approaches to foster physical literacy. He emphasises that the climate should ensure that 'all participants feel they are valued', an aspect that was noted in the ambience of the corridors of both schools where, *'the overwhelming feeling in the space is of valuing and respecting one another, not just in the school but in the community and world'* (FNA 221, 15), the atmosphere was *'calm but busy- purposeful movement. Happy children move around confidently'* (FNB 228, 5).

As well as the developments in the outside space, the classroom environment also impacted on the ethos and learning. Postman (1996) identifies the importance of the environment and the messages it conveys when he discusses McLuhan's comment 'the medium in the message' that is:

The perceptions you are allowed to build, the attitudes you are enticed to assume, the sensitivities you are encouraged to develop – almost all of the things you learn see and value. You learn them because your environment is organised in such a way that it permits or encourages or insists you learn them.

(Postman, 1996:29)

The physical spaces of the classrooms were changed at the introduction of the Foundation Phase, for example by reducing the number of desks in the classroom. Whole classes of children no longer sit at desks to do their learning. Children sat at desks only in specific sessions where the teacher wanted them to focus on a task that required this such as *'POPAT and guided reading – all pupils into groups by ability and work on spelling patterns'* (FN 32,4). Kentel and Dobson's (2007:157) suggestion that 'the desk as a technology for learning' creates a culture that

surmises 'to learn we must be still'. This was not the case in these schools where desks were not the main 'technology for learning,' even when children were working with the teacher in focused tasks as highlighted in a session of '*maths, 1 small group working with Elan (the teacher) sitting on the floor in circle studying shapes*' (FNB 49, 12). The '*shapes group work on the floor using clipboards. Children sit, kneel and lie on the carpet to work, working at recognizing straight and curved sides*' (FNB 49, 20). '*Elan (the teacher) works with a group investigating ice. They go outside and Elan passes ice round the circle to hold and pass on*' (FNB 55, 1).

Handwriting was not done sitting at a desk; '*Mrs Smith (TA) has Peter, Tomos, Chris, Cai, Sarah, Nia. Sue (the teacher) has the rest of the class in space dancing- write dance? Big circle with 1 hand then the other, 2 fingers. Erin is struggling and Dai can't do big no. 8 in the air. Dai can't do lazy 8s. Katy is enjoying dancing. Mrs Smith group use sand trays with sand and rice. Sue's group practiced in the air to music then outside with chalk on the playground*' (FNA 69, 14).

It was clear in the schools in this study that the classrooms were organised to encourage independent learning. This said, independence can be interpreted and valued very differently depending on cultural perspectives. Rogoff (2003) links the notions of control and discipline with independence and interdependence and as a reflection of the values of the society and culture in which we live. It has come to be accepted in western cultures that we see the role of adults as guiding children to be part of a future democratic practice learning to be independent but also part of a society where autonomy in interdependence is respected (Dewey, 1938; Kohn, 1993; Rogoff, 1994; Rogoff, 2003). This was clearly evident in School B in the organization and management of the class council, '*Elan (the teacher) reviews all the things that school council has done in response to class councils so children can hear how their views count*' (FNB 88,14), '*Llion is chair he chooses who will speak, he declares the meeting open*' (FNB 89,1) '*Rhys wants a football pitch in the small playground Johnny thinks this is a bad thing as it is concrete. The children are shown too say if they agree or not first, then why. Llion manages this well – choosing people...The meeting was really good, the children decided they wanted quiet areas outside in the playground*' (FNB 89,5). Inspection reports also identify the strengths

of the school and class councils; *'The school council and the class councils are well established and effective. Pupils feel they have a voice and that staff listen to their opinions well'* (Estyn, 2012:5).

Research from Europe indicates that in classrooms in which teachers exert control through commands and questions, children tend to respond tersely. However 'Children are more active and equal participants when teachers instead use non-controlling talk (such as commentary on their own ideas and demonstrations of their own uncertainty) and increase the amount of time allowed for children to respond' (Subbotskii, 1987; Wood, 1986, cited in Rogoff, 2003:211). This sharing of the learning was evident throughout the Foundation Phase and staff were happy to make mistakes or be perceived to make mistakes as when *'Elan (the teacher) comes out to play – she makes a mistake and they really enjoy showing her how to correct her spelling'* (FNB 161, 8). This approach created a relaxed atmosphere where *'the children are all engaged – the atmosphere is relaxed and they joke about Elan's drawings'* (FNB 159, 6). Collaborative learning with the children was evident in staff responses to pupils' suggestions, *'as Elan (the teacher) draws things Ted says, "I know you could draw stairs", "I was just about to" says Elan (the teacher), Ted seems pleased'* (FNB 159, 16). On another occasion Elan muddled up the toothbrushes, *'Mrs Wray (the LSA) says "shall we put her (Elan (the teacher)) on the sad cloud, children like this bit of banter with miss, showing we all make mistakes!!"'* (FNB, 166, 14).

The climate of the classroom is a crucial factor in the motivation of learners, with both Self Determination Theory and Achievement Goal Theory using the notion of 'climates' to explain how autonomous learning and encouraging task/mastery orientations increase intrinsic motivation (Hastie *et al.*, 2013:51). Classroom climates can either encourage or foster motivation and certain factors create 'autonomy supportive climates' (Hastie *et al.*, 2013; Reeve, 2006; Ryan and Deci, 2000). These factors were evident in both schools over the time of the study, from T1 to T3, where children were provided choices and experimentation and self-

initiation were encouraged (Hastie et al., 2013) as in school A where *'they are encouraged to choose patterns and designs from the pictures'* (FNA 29, 5), and School B when *'the children can choose where to go and play and what they are going to do- they have to plan what they want to do'* (FNB 90, 6). Students were willing to take on challenges, explore new ideas and persist at difficult activities (Hastie et al., 2013). This was particularly evident in a handwriting session when *'Dai rubs his eyes he is getting it wrong, he is upset and frustrated – he has got it but is still frustrated. Dai has mastered the letter f and he is now really pleased'* (FNA 71-72).

They were offered optimal challenges and provided with feedback that was formative for learning and given a meaningful rationale for work they were required to do (Hastie et al., 2013). This formative feedback was evident in a review session in School A:

Sue (the teacher) uses the visualiser to share the children's work and highlight good points....Sue uses pink highlighter to highlight good point "tickled pink". She uses a green highlighter "green for growth" improvements. The children score the work deciding it is 9/10. (there is one mistake). The pupil says she know how she can make it 10/10, and says how she can improve it.

(FNA 124, 9)

The resources within the classroom were organised so that pupils could move around freely and access what they needed. As one of the teachers explained:

We've got rid of a lot of our tables our smaller tables and the tables are in areas there's still space for everyone to sit if they need to but it's not very often that they're all sat at tables and we've put in definite areas we've got a library, a writing area with all the writing equipment, and they know that there's a creative and a construction area, maths area, cooking and

the kitchen part and the children know very quickly where – you know - if they want something, they know that they need go to that part for it

(T1, 56)

The areas were labeled so that pupils could collect what they needed and also return things once they had finished with them. The areas had plenty of storage with relevant resources for the areas of Foundation Phase being studied. Lists of equipment for the areas were on display, and also ideas for topics and questions to ask relating to the topics in the areas, as shown in the maths area, where a poster on the shelves identifies aspects of learning for mathematical development (V12A).

Displays on the walls gave tools for children to be able to work out answers and solve problems independently. An example of this was the reading toolkit in School B. (V13). The toolkit drew on strategies from 'reading recovery' (Clay, 1993). The aim of reading recovery is to ensure that children become independent readers and also develop their broader literacy. The toolkit enabled pupils to use cues for working out words in their reading. The display served as a reminder so that when children were reading and needed to work out a word they could use the display to remind them of the strategies.

Hendy and Whitbread (2000), in studying teachers' perceptions of independent learning, found teachers appeared to have a narrower conception of independence than parents and focused primarily on organizational abilities. Any notion of cognitive aspects of independent learning skills was notably absent. At the same time, the main thrust of teachers' expectations and organizational practices in their classrooms appeared to be moving children towards greater dependence on the teacher rather than less. This contrasts with the findings from this study, where teachers were focusing on cognitive aspects of independence as well as organizational. Although there was, as previously highlighted, a focus on the structural aspects of the learning environment such as the furniture, storage and displays, the fostering of independent learning went further than this. Strategies

were evident in discussions, tasks and questioning throughout all aspects of the pupils' learning. There was a clear emphasis on getting children to work out solutions for themselves and staff seldom told children answers to questions, asking them instead how they could find the answer out, or encouraging them to look closely at work and correct it themselves. *'Cai does his 7 the wrong way, Sue asks him if it is right and to check on the number line'* (FNA 40, 21). *'All the time children are encouraged to think for themselves about how they can do things for themselves'* (FNA 41, 10). Children were encouraged to assess their own work, *'The children score the work'* (FNA 124, 12). *'She (pupil) knows how she can improve it'* (FNA 124, 13). The staff taught strategies for developing the pupils' independence. *'Elan (the teacher) has shown them many spelling strategies that they can use independently'* (FNB 164, 11), *'Elan (the teacher) reads with Conrah and asks the others to see if they can notice what reading toolkits Conrah is using'* (FNB 199, 13).

'Independent learning strategies are embedded solidly into the children practice' (FNB 210, 8). Children were also encouraged to lead groups, *'Jellyfish are going to be on an activity that Carter is going to lead'* (FNB 167, 9), and manage the equipment they needed for these, *'Conrah needed extra Numecon so just goes to get it'* (FNB 207, 19). *'Elan (the teacher) reminds the children to talk to each other it helps them understand their maths'* (FNB 206, 22).

The independent learning strategies that had been modeled by teachers were clearly demonstrated by the children. In contrast to previous studies where pupils became more dependent on adults (Hendy and Whitbread, 2000), the pupils in both these schools looked to each other for support; *'Sean is unsure of the way round b goes. The other children tell him to look at the word 'boot' to see the way – this is an amazing strategy by the children - Elan (the teacher) has not told any of the children what the answer is!'* (FNB 163, 13). *'Emrys shows Charlotte on the phonics strip when she is stuck. Charlotte is stuck so all help her, she does it right and puts her hands in the air in delight'* (FNB 163, 22). *'This is a really supportive learning environment they help each other to be successful'* (FNB 164, 3). *'Elan tells Nicole to check 'rooftop' and*

make sure it is right. She is happy so Elan asks if she is right. The class say 'yes' (FNB 164, 6). 'Elan has shown them so many spelling strategies that they can use independently' (FNB 164, 10). These strategies were also used by the children to question each other and support one another's learning as noted in the field notes for School B when;

Mrs Jones (LSA) is helping Jim, and then Michaela also helps him and asks him "how did you work that out?" – it seems that independent learning strategies are embedded solidly into the children's practice - they naturally ask these types of questions and this is what they have had modeled to them

(FNB 210, 5)

This supportive climate was created through consistent structures and reinforcing of behaviour. The children did not always co-operate and work diligently and the staff reminded them constantly of the ethos and values of the school as when *'children washing up make a mess with soap and Mrs. Smith (TA) has to intervene. Back on the carpet for the plenary children are fussy now and need to be settled. Sue (the teacher) reminds them of the Value of the Month...love. and points out examples the children have shown'* (FNA 21, 6). Staff modeled the behaviour that they expected from pupils as shown when, *'Sue responds to comments from the children with interest and patience'* (FNA 26, 6).

Previous research has highlighted variability in pedagogic interactions with children, and has shown adults tending to use closed questions and statements and very few open questions (Clark 1988; Siraj-Blatchford and Manni 2008). This was not evident in this study as staff consistently used encouragement and open questions to support learning; *'Sue (the teacher) reminds them to slow down and cut carefully to keep it smooth and on the line....Zack is encouraged to look at the curve and practice with his finger first. He then did a really good shape...Sue asks them "how can you do the pointed ends?" She knows their abilities and encourages them to take*

their time and make sure they are happy with their quality of work. She praised Peter's second attempt at cutting (he had rushed the first) and remarks at how proud he was –he clearly was - smiling and 'puffed up' (FNA 29-30). Reflections in field notes from School A highlighted the questioning skills of the staff commenting; 'had to remind myself they are year 1, they are so independent in their learning and it is noticeable how the staff continually reinforce this- How can you do this? What do you think? Let me show you so you can do the rest.- it was evident throughout the whole session' (FNA 34-35). There was an open and caring ethos that encouraged pupils to reflect honestly on their achievements and they were confident to work with others in order to improve, this was particularly evident on an occasion when 'Sue asks Stuart about his cutting which is rushed –he says it is not his best work, so Ann suggests he tries again. Katy and Ann decide to help Stuart' (FNA 66, 9).

McInnes *et al.* (2011) point to a lack of understanding of play, combined with a mistrust of child-led activities and reluctance to give children choice and control, as resulting in an overreliance on adult-led activities with adults having control and choice. However this was clearly not the case in this study, where the teachers were confident to allow the pupils to lead learning and have control and independence. Teachers highlighted their understanding of the importance of independent learning strategies and a growing confidence to work in a playful pedagogy. Teachers identified pupils' independence as a noticeable feature at the end of the academic year (Interview at T2).

I think the thing that stands out the most in the Foundation Phase is to become independent and when you think that's a lifelong skill I think that's just incredible that they feel confident in themselves and secure to go off and do something on their own without waiting for support to do that, and to stay on task for a long time. When you think about the organizational skills that they need to go and be able to go off and do things, what equipment do I need? They need to be able to go and get that all together, what order am I going to do it on? All that planning that just sort of goes

on naturally in their head now, and again I think they used to look to us to organise it all for them and they're doing that themselves, and I think if that was the one thing that I take away from it you know I just think it is fantastic.

(TA)

The teacher from School B also noted the independence of the children as a significant feature at the end of the academic year (T2) and demonstrates a clear understanding of this at a cognitive level as well as an organizational level.

They are very independent and use a lot of their own time to apply the skills we have covered, in their planning and work time they'll use that in their own time as well which is really nice to see. I've noticed especially this term we've discussed a lot in class about independence and not relying on adults so much, I always encourage them to go and ask one another which they do quite a lot now, they offer to help each other, they'll go and find one another because they know one another's strengths as well, so they'll go and ask say if they are stuck on a word they will go and ask one of the more able readers to give them some help. They are brilliant at getting out what they need. They will come and ask me for their word books because they know they've got words in there that they find difficult, so rather than just asking me directly how you spell a certain word they will go and use their word book. So their independency is something I've noticed a huge improvement this year with me. Sometimes when I have needed to go somewhere to do something I will put one of the children in charge of the group and they will plan together and tell that person and they do show that level of respect to the person that I have put in charge to do the planning session with them and it is really nice to see them sat down interacting in that way without needing that intervention at all and they can do that now.

(TB)

'Helping children to learn how to learn, to be reactive about their own learning and to take responsibility for it is likely to lead to the achievement of higher rather than lower educational attainments' (Hendy and Whitbread, 2000: 251). The focus on the development of independent learning and the fostering of metacognition that was evident in these schools may also be contributing to the high levels of motivation as reported in Chapter 5. Thorpe (1991) suggests that metacognitive training can lead to motivational as well as purely cognitive gains amongst primary school children. The teachers' autonomy-supportive behaviour was evident throughout all aspects of the children's learning. As identified in self-determination theory (Deci and Ryan, 1985), autonomy-supportive teachers induce greater intrinsic motivation, curiosity and a desire for challenge, whilst students who are overly controlled lose initiative and learn less well (Benware and Deci, 1984; Ryan and Deci, 2000; Ryan and Grolnick, 1986). In light of the significance of motivation as a key attribute of physical literacy this demonstrates how teacher behaviour contributed to pupil learning and the development of physical literacy, as reported in Chapter 5.

6.3 The acknowledgement of the embodied dimension

Of particular relevance to this study was the way that the behaviour of teachers acknowledged the embodied dimension in both schools. Tobin (2004:111), concerned with the 'disappearance of the body in early childhood education,' identifies how teachers when intervening in disputes with young children tell them to "use your words" (p.117). Walsh's concern is not with the encouragement for using words, but 'with the unstated but implied clause that follows: "use your words *and not your body*" (2004:117). It is this unstated behavior that can strongly influence pupils' views and attitudes. In this case the teachers often used movement as an integral part of communication, and encouraged pupils to do the same, *'Elan (the teacher) uses Makaton signing to support some of her instructions. Her group shares their conclusions with the children from the other group. They give themselves Egyptian clap (high up), small clap (fingers), pat on back'* (FNB 58, 8). *'The teacher uses any opportunity for doing an action, during the talking time 'pointy high roof,*

stretching arms and fingers together' (FNA 2, 11), Here the teachers used movement as part of the communication and as such transmitted a message to children that communication is far more holistic than simply verbal. The use of Makaton was particularly interesting as this is an established signing technique that is used for children with speech and language delays and supports communication by attaching a recognised movement/ action to words. It demonstrates how actions and as such the embodied dimension are an integral part of communication.

Movement was also used in a more directed way to improve concentration and as part of preparation for focused sessions. Activities such as those advocated by 'Brain Gym' (Dennison and Dennison, 2010) were seen at times in the class. *'They do 'picking apples' from the tree....crossing midline and stretching (all together as a class with the teachers) high, mid, low'* (FNA 1, 14), they are *'incorporating movement during the session – acting out snow angels, can you stand on one leg and do this?'* (FNA 2,3). *'To get the children focused Elan (the teacher) sings the Bore Da (good morning) song with clapping'* (FNB 111, 10) at times *'to get attention, Elan does clapping and action patterns for the children to copy then goes into the actions for the story and tells the story'* (FNB 164, 13).

At other times the movement was part of the concept being taught. *'Elan (the teacher) uses physical signs to reinforce + sign and – sign'* (FNB 82, 18) *'Elan explains each group's activities using Numecon and actions to reinforce signs. She crosses her arms when she says add'* (FNB 167, 1). This example illustrates the recognition of the embodied dimension as integral to understanding an abstract concept in maths. Here pupils were learning to attach a sign to a concept. The use of actions combined with the use of Numecon equipment made the process of learning addition and subtraction holistic, rather than sitting at a desk completing worksheets of sums.

These examples demonstrated the value placed on the embodied dimension by the teachers in this study and highlights how 'embodiment and corporeal learning' (Stolz, 2013:959) were integral to the children's experiences in the Foundation

Phase in these two schools. Here teachers' behaviours modeled movement in learning and their language encouraged children to move also and respond as embodied individuals. The learning environment was also such that movement was an expectation of the learning process. As highlighted previously in the chapter the removal of desks encouraged pupils to move whilst learning, to use the floor or go outside. This physical environment combined with the teachers' encouragement to move and engage with the learning in a more holistic way meant that pupils moved freely much of the time and were not told to sit at desks to complete tasks.

These opportunities to learn as an embodied being are a fundamental part of being human and need no justification beyond that (Whitehead, 2013). It is on account of this that the development of physical literacy is fundamental to the enrichment of lives by allowing authentic meaningful lived experiences (Almond, 2013; Shusterman, 2004; Whitehead, 2013). For the children in the Foundation Phase, their learning was embodied, a part of who they were and how they were learning to construct their understanding of themselves in the world.

6.4 Conclusion

This chapter reported findings from phase two of the research in relation to the processes impacting on the achievement of the learning outcomes. Research question three asked 'what processes might be impacting on the achievement of the learning outcomes?' The chapter focused on these processes in terms of the structures, policies and practices of the schools that enabled teachers to implement the Foundation Phase. It analysed the data in relation to the key features of the Foundation Phase identified in phase one of the research (reported in Chapter 4) and used these key features to ascertain that even though there were low levels of prescription in the documentation and guidance, the Foundation Phase was implemented faithfully to the original aims of the policy makers in the two schools in the study. Teachers in the Foundation Phase were part of a wider school ethos that supported children's independence and valued movement as part of children's experience of the world. Staff used a variety of autonomy-supportive instructional

behaviours that created a climate supporting intrinsic motivation and encouraging self-determination. The culture and learning climate of the schools developed children's physical literacy. The embodied dimension and movement were a valued and integral part of school life. Autonomy was supported across all aspects of school life **developing independent, motivated, active learners**, which was identified as the aim of the Foundation in phase one of the research (reported in Chapter 4). Conclusions relating to the achievement of the aims of the Foundation Phase, fidelity of implementation and the main findings of the research study will be discussed further in the concluding chapter (Chapter 7).

Chapter 7. Conclusion

The introduction of the Foundation Phase in Wales in 2008 saw the disappearance of Physical Education as a subject in the curriculum for all pupils aged three to seven years. In light of the wider learning that is associated with Physical Education, this research sought to ascertain the contribution of this curriculum to pupil's physical literacy. In order to explore this, schools were selected that were reported to be delivering high quality Foundation Phase provision. This enabled the study to ascertain the impact of the curriculum, in essence asking 'when the Foundation Phase is done well does it work?' The implementation of a curriculum is complex, maintaining fidelity to the original aims of policy makers being a key issue. In order to explore the contribution of the Foundation Phase to pupils' physical literacy, this study therefore also needed to ascertain the fidelity of the implementation of the Foundation Phase in the two schools.

Following the identification of two schools for the study, a three-phase complementarity mixed-methods research design was used in line with a pragmatic approach to answering the research questions (outlined in Chapter 3). The first phase of the study identified the aims and key features of the Foundation Phase that were later used to ascertain the fidelity of implementation in phase two. Phase one also identified learning outcomes of the Foundation Phase in relation to physical literacy, and these were used to inform the methods for phase two, which explored whether and how these outcomes were being met. The third phase of the study analysed a combination of school data with data generated in phase two to explore relationships between the development of physical literacy and pupils' wider learning.

This chapter in conclusion will firstly reiterate the main findings of the study as reported in Chapters 4, 5 and 6 and examine these in relation to the implementation of the Foundation Phase and the achievement of its aims. The second section of this

chapter will explore the implications of this research to curriculum innovation in the fields of Physical Education, early years education and child development, and outdoor education. The third section of this chapter will explore the strengths and limitations of the study. Finally this chapter will highlight links to existing research and implications for future study and developments.

7.1 The main findings

The implementation of the Foundation Phase curriculum in Wales gave a unique opportunity for this research to study the impact of a naturalistic intervention as it was implemented in two schools. The Foundation Phase as a play-based curriculum without Physical Education in its traditional form raised concerns about the impact of this innovation on the development of physical literacy. Existing research and literature (discussed in Chapter 2) also highlighted the complex nature of curriculum change and the need for further research into the impact of new innovations (Fullan, 1997; 2000; 2003; Kirk and Macdonald, 2001). In order to generate data on such a complex phenomenon as the play-based Foundation Phase curriculum, a pragmatic approach to the research design was required and a three-phase complementary mixed-methods design was used. This combination of both qualitative and quantitative methods enabled measures of pupils' achievements to be complemented by rich process data. Analysis of the data (as outlined in Chapters 4, 5 and 6) resulted in the following main findings:

- In the two schools in this study the Foundation Phase was implemented with fidelity to the original aims of the policy makers.
- The Foundation Phase makes a positive contribution to the attributes of physical literacy.
- The Foundation Phase is an inclusive learning environment for pupils with a range of needs.
- There is a positive relationship between pupils' physical competence and pupils' intellectual development.

- The Foundation Phase in the two schools in the study is achieving the aim to develop independent, motivated, active learners.

These findings emerged from the analysis of data generated to answer four research questions.

7.1.1 Research question one

‘What are the main learning outcomes of the Foundation Phase in relation to Physical Literacy? And how are teachers interpreting these learning outcomes?’

This question explored the nature of the Foundation Phase to ascertain the interpretation of the innovation in the process of implementation and as such fidelity to the original intentions of policy-makers. The existing literature highlights the incongruence between the intentions of policy developers and what ultimately translates into practice (Ennis, 2013; Fullan, 2003; MacLean *et al.*, 2013; Sparkes, 1990; Supovitz, 2008). In order to ascertain the fidelity of the implementation of the Foundation Phase in the two schools, data from phase one of the study identified four key features fundamental to the Foundation Phase: play-based active learning, focused adult-led sessions, child-initiated learning, and use of the outdoors for learning. The findings from phase two of the research indicated that there were high levels of fidelity between policy and practice in both schools throughout the time of the study. Although both of the schools were very different in their contexts, they had both created environments that encouraged physical activity throughout all aspects of learning, with high levels of engagement in the outdoors. Although access to the natural environment was limited in School B, and children had to walk to a ‘Forest School’ location off site, both of the schools used the immediately accessible outdoor spaces within the school grounds as an integral part of the learning throughout the day and in all areas of learning in the Foundation Phase.

Also evident (discussed in Chapter 6) was the balance in both schools between adult-led sessions and child-initiated learning. Both schools retained focused

teaching sessions, as a whole class and in small groups. Alongside these, the children had a variety of opportunities for choice and autonomy in their learning. It was apparent that the management of the schools and the ethos created by the head teachers and deputy head teachers was an important factor in the faithful implementation of this curriculum. Heads had prioritised resources to develop the environments and ensured staff had access to professional development during the implementation of the new curriculum. Fullan and Pomfret (1997) identified how successful implementation of an innovation depends on the extent that users are clear about it, with Morrison (2003:286) highlighting the need for management to have systems in place that allow creativity and 'self-organised criticality'. This study supports Fullan's work on the change process (1999, 2003), which identifies the need for schools to have ownership of change and staff to work in collaboration acknowledging diversity and the complexity of the process. It was apparent that the ethos of both schools created an autonomy supportive climate, which Deci and Ryan (2009) identify as crucial for staff to internalise and endorse reform.

This autonomy-supportive climate was evident in the whole school approach to learning. Children were given opportunities for choice and ownership of learning and the environment was structured to ensure pupils were able to access resources they required for tasks. The findings outlined in chapter five highlighted how the learning climate was highly inclusive for all children with a diverse range of needs. The findings suggest that the Foundation Phase is fulfilling the aim identified in phase one of the study of developing independent, motivated, active learners. The phase two findings illustrate how these schools were implementing the Foundation Phase through a play-based active learning environment, a balance between focused adult-led sessions and child-initiated learning with an emphasis on the use of the outdoors for learning. In so doing they were developing pupils with a motivated, independent and active approach to learning in line with the aims of the policy makers. Therefore the findings of this research suggests that when the Foundation Phase is implemented with fidelity to the original principles of the policy makers that it is achieving its aims and should be deemed to be successful.

7.1.2 Research question two

‘To what extent are these outcomes being achieved?’

In order to ascertain the contribution of the curriculum on the development of pupils’ physical literacy, phase one of the research identified six learning outcomes that were aligned to the attributes of physical literacy of physical competence and interaction with the environment, motivation and confidence. Quantitative methods in the form of a quasi-repeated measures and observational tools measured children’s progress against the learning outcomes identified in phase one. This data was complemented by qualitative methods that explored the processes impacting on the pupils’ achievement. The combination of methods gave a rich multi-layered picture of the children’s experiences in the Foundation Phase in order to answer research questions two and three.

The findings outlined in depth in Chapter 5 indicated the play-based active nature of the Foundation Phase was enabling the development of confident, motivated and physically competent children, and as such was making a positive contribution to the development of physical literacy. Quasi-repeated measures assessing gross and fine motor skills found that the children had high levels of motor competence and they made significant progress in Locomotor skills. However there were no significant improvements in Object Control skills.

Interesting to note was that the children in the study appeared to be accurate in their judgements about their physical competence. Data from the Harter Perceived Physical Competence Scale showed significant correlation with the Gross Motor Quotient scores as measured by the TGMD-2. These findings were surprising for children of this age (six years), as existing literature suggests that children under the age of seven do not distinguish accurately between effort and mastery of a skill (Fox, 2010; Goodway and Rudisill, 1997; Harter, 1999; Harter and Pike, 1984; Nicholls, 1978; Stodden *et al.*, 2008). A key feature of the Foundation Phase was

identified as play-based active learning and therefore the day-to-day environment and ethos of the schools valued movement and created many opportunities for children to develop understanding of their embodied dimension. The value placed on movement and the embodied dimension was evident in both teacher behaviour and the classroom environment in both schools.

7.1.3 Research question three

‘What processes might be contributing to the achievement of the main learning outcomes?’

Literature highlights that children do not naturally acquire fundamental motor skills through play alone (Gallahue *et al.*, 2012; Goodway and Branta, 2003; Goodway, Savage and Ward, 2003; Maude, 2010; Robinson and Goodway, 2009). The role of the adult is important in analysing the stage of development and in creating tasks and an environment, which are appropriate for progression in the development of the skill. In this study the combination of both the highly active learning environment alongside the retention of adult-led physical development lessons, appears to have had a significant impact on the children’s Locomotor skills. However it would seem that the more sport specific and perhaps more specialised Object Control skills such as bouncing a ball and striking a ball, required more specialist input. The teachers in the classes in this study had no specialist training in Physical Education, and although they were enthusiastic about physical development it is possible that this lack of specialist knowledge reduced the impact on children’s development of Object Control skills.

It was also evident that the amount of time and the number of opportunities for developing and practicing Locomotor skills appeared to be greater than for Object Control skills. The active playful approaches evident in the data (as reported in Chapters 5 and 6) gave the children many opportunities for developing their Locomotor skills with activities such as treasure hunts, chasing games, exploring the outdoors by running, jumping and general travelling activities. This appears to have

resulted in higher levels of measureable motor development in the area of Locomotor skills. However there appeared to be fewer opportunities to practise and develop Object Control skills even though the playtime equipment in both schools included balls and bats and a variety of objects. Analysis of the qualitative data suggested that children tended to only access these during playtimes, lunchtimes and in some focused Physical Development lessons. Therefore the number of opportunities for practising and consolidating Object Control skills were fewer than was the case with Locomotor skills, which were often an integral part of learning throughout the day.

Merleau-Ponty (1963:159) emphasises that the learning of a new skill is 'an embodied social process of being with others in a joint effort of learning' and this was very much in evidence in the Foundation Phase. Children were learning in highly physical ways in pairs, groups and in whole class situations, they were constantly having opportunities to learn about their own capabilities in relation to others and the tasks. It may be that the high levels of physical activity and embodied learning throughout the Foundation Phase on a daily basis enabled children to develop more accurate perceptions of their own movement capabilities. This highly active play-based curriculum was an environment where the underpinning philosophy of existentialism was clearly evident. Here through 'operational intentionality' (Whitehead, 2010:26) children were able to construct their understanding of themselves as 'beings-in-the-world' (Merleau-Ponty, 1962:58). It is perhaps the value placed on movement and the embodied dimension in the Foundation Phase in these schools that contributed to the accurate perception of physical competence. The meaningful authentic learning experiences that have been highlighted in this study reflect 'lived experiences' that Shusterman (2004:52) suggests heighten awareness of feelings and insights, and are crucial for children to learn to value themselves as embodied (Walsh, 2004).

The accurate perception of physical competence demonstrated by pupils in this study raises the issue of motivation for those pupils with lower levels of motor

competence. Existing literature suggest that low levels of perceived physical competence are related to lower levels of motivation to engage in physical activity (Stodden *et al.*, 2008; Fox, 2010). Young children usually relate competence to effort, therefore lower levels of competence may not be an issue for young children in relation to motivation, as they do not have an accurate perception of their ability (Fox, 2010; Goodway and Rudisill, 1997; Harter, 1999; Harter and Pike, 1984; Nicholls, 1978; Stodden *et al.*, 2008). Surprisingly, the pupils in this study appeared to have accurate perceptions of their physical competence from as young as six. Pupils with lower levels of physical competence would be expected to be less motivated to engage in physical activity. However, contrary to the existing literature, analysis of qualitative data in this study found that the children who had lower levels of motor competence along with lower perceived competence were still physically activity throughout all aspects of their learning. The children in the Foundation Phase had many opportunities for physical activity and as such numerous examples for temporal comparisons. Harter (1999:45) highlights the work of Suls and Sanders (1982) who found that younger children ‘first focus on temporal comparisons and age norms rather than individual difference comparisons with age-mates.’ This may account for why these children remained happy to engage in physical activity. Another factor may also have been that the activity-focused approach to learning at the schools fostered a culture of movement that was the norm for the children.

The ethos of the Foundation Phase is one that supports learners in developing independent learning. The findings in Chapter 6 identified a highly autonomy supportive climate. Existing literature in the field of self-determination theory identifies how intrinsic motivation is sustained by satisfaction of the need for autonomy (Niemic and Ryan, 2009; Ryan and Deci, 2000). It is therefore also possible that the high levels of autonomy that were evident in the Foundation Phase (see Chapter 6) enabled pupils to maintain high levels of intrinsic motivation even in those pupils with lower levels of perceived competence. The focus on meta-cognition and independent learning evident in the Foundation Phase ensured that

pupils were aware of the complex nature of learning that often required many attempts to master new skills and understand concepts. They accepted that they would sometimes have to try different approaches and seek help from staff and peers. They recognised that peers may be better at some tasks and worse at others. The Foundation Phase ethos in these schools was one that focused on process rather than outcome and sought to develop independent learners ready for the next stage of education. Not being the best at something wasn't an issue for the children and they were confident to attempt new challenges and share their opinions with others. This may further explain why pupils with lower levels of physical competence despite being accurate in their perception of their ability were still motivated and engaged in physical activity.

Perceived competence is an important factor in the development of self-esteem and the physical self in particular has a strong relationship to global self-esteem (Fox, 2010). The importance of global self-esteem is recognised in relation to an individual's feeling of self-worth, and as such well-being (Harter, 1999; Fox, 2010; Marsh, 1986). Whitehead (2010:13) highlights sense of self and self-confidence as attributes of physical literacy, stating that physically literate 'individuals will have a well-established sense of self as embodied in the world. This, together with an articulate interaction with the environment, will engender positive self-esteem and self-confidence.' The ethos in both schools discussed in Chapter 6 created an environment where pupils had the self-confidence to contribute to discussions and share their opinions. These high levels of confidence were evident throughout all aspects of the children's learning, with data demonstrating children chairing their own class council meetings and working in their groups without adults present to keep them on task. They were confident to manage their learning and share their experiences, showing how they were developing their independence.

The learning environment is an important aspect of the Foundation Phase and use of the outdoors as an integral part of the learning was a key feature in the two schools. The use of the outdoors has long been associated with benefits for pupils with a

diverse range of needs with policy, literature and research highlighting the impact of the outdoors in particular in relation to underachievement (Newsom Report, 1963; Hopkins and Putnam, 1993). Teachers have been found to have different expectations in the outdoors, judging underachievement differently and repositioning themselves more as adults than as teachers and creating a different dynamic allowing pupils to re-construct themselves as strong and competent as opposed to underachieving (Maynard *et al.*, 2013). Maynard *et al.*'s research highlights the role of the outdoors as the key to amplifying the effects of child-initiated learning. However in this study, high levels of child-initiated learning and autonomy were evident in both the indoor and outdoor spaces. Previous studies during the pilot stages and early implementation of the Foundation Phase identified teachers' reluctance to allow child-initiated learning, particularly in the indoors fearing a lack of control (Maynard and Waters, 2007; Maynard and Chicken, 2010; Maynard *et al.*, 2013; Maynard *et al.*, 2013). The teachers in this study also commented that they had initially been reluctant to allow the children as much autonomy as they did during the time of the research. They highlighted that they had increasingly allowed more child-initiated learning as they had grown more confident with the Foundation Phase approach. It may be that the increased use of the outdoors, as a space in which teachers feel more relaxed and able to 'let go' will enable teachers to develop more confidence and increasingly allow pupils greater autonomy in all aspects of their learning both outdoors and indoors.

The teachers' increased confidence to use the outdoors was apparent in both schools in the study. There was consistent use of the outdoors in the Foundation Phase in the two schools in the study. However, as identified in previous research (Maynard and Waters, 2007) there was still a lack of extended periods of time with free play in wilder natural spaces. Both schools were using and developing the school grounds, planting trees and were in the process of increasing the use of the natural spaces. They also used off site 'Forest School' areas. However, the use of these spaces was often structured missing the opportunity for creative liberating experiences free from rules. These wild places are spaces which Wilson (2012:32)

suggests children need so they can explore freely and learn things ‘that cannot be taught.’ The natural spaces that the schools used did, however, offer a more diverse range of affordances, which encouraged a wide range of physical actions, increased physical activity and improved motor development (Kytta, 2004; Stroli and Hagen, 2010; Fjortoft, 2004). It is interesting to note that the pupils in School A had higher levels of physical competence as measured by GMQ than the pupils in School B. Both schools used the outdoor environment for a similar amount of time in the pupils’ learning however pupils in school A did have more access to natural spaces than pupils in School B. Fjortoft (2000) found increased motor development in children using natural spaces, and therefore it could be that the increased use of natural spaces by School A may be a contributory factor in their higher levels of physical competence.

The importance of the interaction with the environment is not only recognised in Dynamic Systems Theory that emphasises the relationship between the individual, the task and the environment as factors that influence motor development, but it also resonates with the existentialist philosophy that underpins physical literacy. Existentialism, as Whitehead (2010:23) explains, highlights that ‘individuals create themselves as they live and interact with the world.’ The complexity and diversity of affordances offered by the natural environment contribute to the rich variety of movement experiences that are needed to contribute to the development of children’s physical literacy. This is recognised not just in the improvement in physical competence as highlighted by Fjortoft (2000; 2004), but also in the wider notion of well-being as alluded to by Wilson (2012). Literature is increasingly recognising the benefits of the outdoors in relation to mental health and well-being (Korpela and Hartig, 1996; Berto, 2005; Bird, 2007; Munoz, 2009; Korpela *et al.*, 2001; Douglas, 2005; Taylor *et al.*, 2001; Taylor and Kuo, 2001, 2008). When considering the concept of physical literacy this wider benefit of interaction with the natural environment is unsurprising. The existentialist and monist philosophies that underpin physical literacy argue that individuals are created through interaction with the environment and are one indivisible whole. Therefore it could

be deemed as obvious that interactions with the environment will affect the holistic development of the child.

The manner of pupils' interaction with the environment was also of particular relevance to the findings of this study in relation to the Foundation Phase as a playful pedagogy. The Foundation Phase documentation advocates 'children learn through first-hand experiential activities with the serious business of 'play' providing the vehicle' (DCELLS, 2008a). This approach was highly influenced by open curricula such as *High/Scope*, *Te-Whariki* and *Reggio Emilia* (outlined in Chapter 4). In these international approaches there are high levels of free spontaneous play, however surprisingly this was not the case for the Foundation Phase, where play was within a structured learning environment with the adult often acting as facilitator. Existing research and literature outlined in Chapter 2 highlights how children use cues to distinguish between play and work (McInnes, 2009, 2011) and this was particularly evident in this study. The tasks and activities that were planned by teachers were often playful in their nature and as such included many of the cues that children used to identify an activity as play (McInnes, 2009, 2011). As children perceived much of the learning as play there were high levels of motivation and engagement in the learning (highlighted in Chapter 5). Laevers (2000) suggests that higher levels of well-being and involvement in tasks results in deeper learning. With such high levels of motivation and engagement in tasks and the high levels of well-being reported in this study, it would be expected that pupils would be experiencing a deep level of learning in the Foundation Phase and laying strong foundations for future learning.

7.1.4 Research question four

'How is the development of physical literacy related to children's wider learning across the Foundation Phase curriculum?'

Phase three of the study, in seeking to answer research question four, sought to explore the relationship between children's physical literacy and wider learning.

Cognitive assessments and school assessment data were used to ascertain whether there was any relationship between pupils' learning in the cognitive and affective domains with physical competence. Of particular interest was the correlation between pupils' motor scores and their cognitive scores. Pupils with higher motor scores as measured by GMQ had higher cognitive scores as measured by the Goodenough Draw-a-Person Test. This relationship supported previous research in the Millenium cohort study where a relationship was found between physical development and cognitive development at age five (Hansen *et al.*, 2010). Existing literature also highlights the importance of early movement experiences in ensuring that the brain is ready for higher order thinking and learning (Ayres, 2005; Goddard Blythe, 2005; Kirby and Drew, 2003). This is of particular significance for a new curriculum such as the Foundation Phase, which as the name suggests is laying the foundations for children's learning. A further interesting aspect is the notion that the Foundation Phase will 'close the gap' in terms of performance of children from poor socioeconomic areas (Davidson, 2010). The data shows that there was a relationship between motor competence and cognitive development. However, children from the school within a poorer socioeconomic catchment (School B) had poorer physical competence with lower scores in the GMQ than pupils from School A. School A had pupils from a mixed socioeconomic background. Therefore, although pupils in School B made significant progress their scores were lower than pupils in School A. This suggests that more input, such as pre-school programmes and community support, may still be needed in areas of socioeconomic deprivation if the curriculum is to achieve its goal 'to narrow the gap in performance between our most advantaged and disadvantaged students as well as raising the overall bar in performance' (Davidson, 2010:20).

7.1.5 An inclusive learning environment

Independence and autonomy in learning was particularly interesting in the case of pupils with additional needs. As discussed in Chapter 5, the freedom of pupils to choose their activities, select resources and get on with the task without confrontation from staff enabled pupils, for whom the normal structures of school

were a challenge, to succeed in their learning in the company of their peer group. This may be particularly relevant for children with autism who often have limited opportunities to play alongside peers. Due to the need for individual learning programmes, pupils with autism seldom have opportunities for this type of play, despite evidence of successful peer-mediated interventions (Frith, 2005; Rogers, 2000; Seach, 2007). The highly inclusive learning environment was therefore a particularly striking feature of the Foundation Phase.

7.2 Strengths and limitations of the study

The diverse nature of the Foundation Phase curriculum required the research to draw on literature from a range of fields, including curriculum change, physical literacy, early years motor development and outdoor education. Much of the literature in these fields stems from a particular research paradigm. This study however combined approaches from both the quantitative and qualitative paradigms. As discussed in Chapter 3, purists in the field of research methods argue that combining quantitative and qualitative methods from different paradigms is neither advisable nor possible. However a growing body of literature argues for mixed-methods as ‘the third research paradigm’ and suggests that pragmatism is the best approach to answering educational research questions (Cohen *et al.*, 2011; Gorard and Makopoulou, 2012; Greene, 2008; Johnston and Onwuegbuzie, 2004:14; Morgan, 2008). Curriculum implementation is complex and multi-layered and as such this study required a complex approach, which consisted of a three phase, complementarity mixed-methods design. The use of mixed-methods was a particular strength of the study as it enabled data generation to capture the complexity of the Foundation Phase as a naturalistic intervention. This use of many methods allowed multiple facets of different phenomena to be studied, and explored the nature of the Foundation Phase as it was constructed and experienced by the teachers and pupils in the schools.

The use of many different instruments presented numerous challenges. Training was required in the use of the TGMD-2 and BOT-2 to ensure accuracy and

consistency in scoring and this was further supported by intra-rater and inter-rater reliability. Participant observation presented challenges in respect of two key aspects; firstly, the need to establish a role in the classroom with minimal impact on the pupils and staff, secondly, the recognition of bias and subjective comments in the field notes. Piloting of methods at the end of phase one allowed for the establishing of a role within the classroom to be addressed whilst reflections within the field notes were used to raise awareness of bias and subjectivity in the generation of data. Managing the volume of data was also challenging. The use of many instruments across a long period of time required careful storage of data with cross-referencing. Field notes were used to record when the various instruments were used and thus ensured that the relationship between different sources of data was clear. Notwithstanding the complex methodological challenges of the research, it is suggested that being able to use data from the different methods to complement each other was an important factor in gaining a deeper insight into pupil learning. It was this deep insight that provided the rich understanding of the processes that had underpinned the progress made on the measurable outcomes. Only by adopting this approach could the complex learning processes of the Foundation Phase be better understood. This study demonstrates using mixed methods design is an appropriate approach for educational settings.

Several limitations of the study have also been considered. Firstly, a lack of experience as a researcher at this level meant that training in the use of research instruments and data analysis was required. Secondly, the holistic nature of the Foundation Phase resulted in the generation of a broad range of data. The considerable volume of data generated has meant, due to the constraints of the thesis, that the maximum use of all data has not been possible. Thirdly, the timing of one of the repeated measures at the end of term could have been avoided ensuring fewer distractions for children during tests. In relation to quantitative data, there was no control group as this was a naturalistic study using mixed methods. As such the numbers for quantitative analysis were small and limit the causal conclusions that can be drawn in relation to these. Finally, the sample of pupils selected for the

repeated measures was based on judgements of the class teachers. Children were selected as a sample of higher, mid and lower motor competence. The teachers making the judgements had little or no Physical Education expertise and therefore may have had limited understanding of motor competence.

7.3 Key Messages

There are four key messages from this study for the development of curricula to support physical literacy.

7.3.1 Training and professional development to support curriculum implementation

The findings support previous studies that highlight the need for training and professional development to support a curriculum where there are not high levels of prescription. In this case the Foundation Phase was implemented faithfully in both schools resulting in the aims of the Foundation Phase being achieved. This was possible due to high levels of support from senior management and the local authority in the implementation process.

7.3.2 Specialist Physical Education support in the Foundation Phase

The findings suggest that the Foundation Phase makes a positive contribution to the development of physical literacy. However, pupils' Object Control skills did not improve significantly and these skills are often specifically associated with sports. The lack of Physical Education specialist teaching in the Foundation Phase may have been a contributing factor to the lack of significant improvement in Object Control skills. The holistic nature of the Foundation Phase with its physical play-based approach to learning resulted in much of the broader learning associated with Physical Education being developed across all aspects of the curriculum and no longer restricted to Physical Education lessons. Although the Foundation Phase contributes to the development of physical literacy, the development of specific physical skills such as Object Control skills may need more specialist input from Physical Education teachers to see significant improvements. When considering the

impact of these sport-related skills on lifelong physical activity then the health implications are considerable if pupils do not acquire them (Stodden *et al.*, 2008). Specialist teacher support in the Foundation Phase is therefore an important issue for consideration.

7.3.3 A playful pedagogy as a foundation for learning

Findings related to child development and readiness for learning are particularly relevant for early years practitioners and policy makers. The study suggests that the highly playful and physical approach to learning contributed to readiness for learning and this supports existing research and literature (Ayres, 2005; Goddard Blythe, 2005; Kirby and Drew, 2003) where strong links are made between movement and brain development. The data from the schools' assessments would suggest that this readiness for learning translated into academic achievement, with children's literacy and numeracy being well-supported by the Foundation Phase. This playful approach to learning may also be of importance in relation to several other aspects of early years education. High quality early movement experiences are known to suppress early childhood reflexes and so reduce the barriers to learning that are often associated with specific learning difficulties (Goddard Blythe, 2005; Kirby and Drew, 2003). The highly autonomous nature of the play-based learning in the Foundation Phase allowed pupils with challenging additional needs such as autism and severe behavioural problems to be included in successful learning experiences with their peers. Developing a playful pedagogy that recognised the cues children use to define an activity as play or work, allowed adult-led learning to be perceived by pupils as play and as such maintain high levels of motivation and engagement in the tasks. Teachers gave pupils high levels of autonomy in their learning in both indoor and outdoor learning experiences. This meant that teachers had different expectations of pupils' behaviour in their learning, allowing more freedom for movement and noise, thus enabling pupils to view themselves in a positive way as strong independent learners, a factor that has previously been identified as a strength in the use of the outdoors (Maynard *et al.*, 2013).

7.3.4 The Outdoors as an integral part of children's learning

A final key message is that the increased emphasis on the use of the Outdoors ensured that pupils were physically active and significantly developing their Locomotor skills, supporting previous research (Fjortoft, 2000; 2004; Mygind, 2007).

However the use of the Outdoors may have far greater implications. The use of the Outdoors as a space for learning ensured that pupils' perceived the task as play and so were highly engaged and motivated when learning outside. The use of the Outdoors may be a way to develop teachers' confidence in allowing more child-led learning which, as seen in this study, may translate into the indoor setting and contribute to creating an autonomy supportive climate an important factor in motivation. The use of the Outdoors ensured variety in the affordances offered to pupils in their movement and learning, an important factor in the development of physical literacy. In our modern society where children play less in the Outdoors and in particular natural environments, the use of the Outdoors as integral to the Foundation Phase may have wider benefits for pupils' mental as well as physical health (Gill, 2007; Louv, 2005; Palmer, 2006). However, although both schools were using the Outdoors throughout much of their learning, the amount of free play in natural settings was still limited and, as in previous research (Maynard and Waters, 2007), is an area that could still be developed to fulfil the potential that the Outdoors has to contribute to the development of children's physical literacy, and as such their holistic well-being.

7.4 Future research

In order to gain an insight into the long-term impact of the Foundation Phase, further research will be needed that tracks the progress of the pupils longitudinally, through Key Stage 2 into secondary school and beyond. The real assessment of the impact on pupils' physical literacy will come from charting progress through life and

determining to what extent these children have remained motivated and engaged in purposeful physical activity.

Future research using greater numbers of participants could give insights into some of the issues raised in this study. These could include the development of Object Control skills, the use of specialist Physical Education teachers, the development of physical competence in relation to socioeconomic background and pupils' perceived physical competence in relation to their physical competence.

The issue of perceived physical competence and physical competence is an issue that needs further research in relation to transition from Foundation Phase to Key Stage 2. In this study some of the pupils in the Foundation Phase remained motivated and engaged in physical activity despite having poor physical competence and a seemingly accurate perception of their physical competence. This raises questions about how this motivation can be preserved in Key Stage 2 until their levels of physical competence improve. Future research could study a range of pedagogical models for Physical Education that may protect these children from situations where their lower levels of physical competence matter. This could include research into the role of the Outdoors in Key Stage Two and Three learning, in particular exploring how the Outdoors can be used to develop an inclusive autonomy supportive climate in Physical Education and in cross-curricular learning beyond the Foundation Phase.

Transition from the Foundation Phase to Key Stage Two also raises questions about the continuation of an autonomy supportive climate. Future research could explore ways in which this climate can be replicated for older pupils in light of recommendations for curriculum developments in Wales. These recommend a three – sixteen curriculum that has areas of learning similar to the Foundation Phase, where the subject of Physical Education no longer exists, but 'Health and Well-being' is one of six areas of learning. This raises questions for future research about the role of Physical Education specialists in supporting Health and Well-being

across the curriculum and beyond and how they promote physical activity and a range of experiences that contribute to the development of physical literacy.

The highly inclusive learning environment that was found in the schools in this study highlights the potential for the inclusion of more pupils with additional needs in a mainstream setting and would be another area for further research. In particular a focus on how the use of a playful pedagogies that are child-centred such as the Foundation Phase could be developed for older pupils to ensure high levels of motivation and engagement in learning for all children.

The Foundation Phase in Wales has seen the removal of 'the desk as a technology for learning' with children no longer expected to sit still to learn (Kentel and Dobson, 2007:157). As such a new premise underlies the culture of early education in Wales: to learn we must move.

Appendix A: Images of the School Grounds

School B Outside area.







School A outside area







Appendix B (i): Covering letter for parents



Investigating the Foundation Phase in Wales.

Dear Parent / guardian,

Your child's class has been selected to be part of a research project investigating the Foundation Phase in Wales.

Please find enclosed details of the project and a consent form for participation in the project.

If you would like to meet with Nalda Wainwright to discuss the research in more detail, please can you let the school know and a date for a meeting can be arranged.

If not please can you sign the enclosed consent form and return to the school as soon as possible.



Appendix B (ii): Information for head teachers and staff



Investigating the Foundation Phase in Wales.

A research project in primary schools conducted by Nalda Wainwright.

What is the project?

The introduction of the Foundation Phase in Wales means that Children are more involved in their own learning, and are more actively engaged both in the indoor and outdoor environments.

Existing research suggests that there may be many benefits for children's development and learning in a more active play based curriculum that uses the outdoors.

This research aims to study some of the outcomes of the new Foundation Phase, and how these are impacting on children's development and learning.

The research will take place in the school setting, as it aims to study Foundation Phase in its real context.

The research will be in the form of some assessments of children's progress, interviews with staff, pupils and parents, and observations.

The outcomes of the study are:

- To investigate how the learning outcomes of the Foundation Phase are impacting on children's development.
- To apply the research more widely, publicising findings through conferences and written material
- The research will form an important part of work leading to a PhD.

Nalda Wainwright will carry out the Research, under the supervision of Professor David Kirk, and Dr Margaret Whitehead (University of Bedfordshire) and Dr Andrew Williams (University of Wales Trinity St David).

The research will involve collecting data through observation, interviews and a motor development test. The collection of data will take place several times each term over approximately 2 years.

All research will be open and honest, and we will not carry out research of which you are unaware. The research will follow the ethical guidelines for educational research set out by the British Educational Research Association. Available at <http://www.bera.ac.uk/publications/guidelines/>

Confidentiality: Any research in which you / the children take part will be treated in complete confidentiality so that you / the children cannot be identified by anyone reading the research. This confidentiality is provided by:

- **Anonymity:** All recorded research will be in a false name / number.
- **Security:** If retained, written material will be kept in a locked filing cabinet and destroyed by shredding after use. Recorded material (e.g. recordings of discussions) will be transcribed within two weeks of completion (with transcriptions stored as above), and the tapes either destroyed or wiped. Any pictorial or video material (for example from video diaries) will be analysed within two weeks and the tape (or other media) wiped.
- **Withdrawal:** You have the right for any piece of material that involves you / the children to be withdrawn at any time. Such material (and all records of it) will be destroyed through shredding or wiping.
- **Access:** You have the right of access to material about you / the children at any time. We undertake to make every effort to facilitate this right.

Withdrawal: You / the children may choose to withdraw from the research at any time. If so, all materials relating to you / the children will be shredded or erased from the record, and no reference will be made to you / the children in any written or published work thereafter. The decision will not be challenged.

If you wish to discuss any of the above, please contact Nalda Wainwright
E-mail n.wainwright@tsd.ac.uk
Tel: 01267 676767

Appendix B (iii): Information for Participants and Parents



Investigating the Foundation Phase in Wales.

A research project in primary schools conducted by Nalda Wainwright.

What is the project?

Since 2008 a new curriculum has been in schools in Wales. For children aged 3-7 years, this is called the Foundation Phase. This new curriculum is a play-based approach to children's learning. Children are more involved in their own learning, and are more actively engaged both in the indoor and outdoor environments.

Existing research suggests that there may be many benefits for children's development and learning in a more active play based curriculum that uses the outdoors.

This research aims to study some of the outcomes of the new Foundation Phase, and how these are impacting on children's development and learning.

The research will take place in the school setting, as it aims to study Foundation Phase in its real context.

The research will be in the form of some assessments of children's progress, interviews with staff, pupils and parents, and observations.

The outcomes of the study are:

- To investigate how the learning outcomes of the Foundation Phase are impacting on children's development.
- To apply the research more widely, publicising findings through conferences and written material
- The research will form an important part of work leading to a PhD.

All research will be open and honest, and we will not carry out research of which you are unaware. The research will follow the ethical guidelines for educational research set out by the British Educational Research Association. Available at <http://www.bera.ac.uk/publications/guidelines/>

Confidentiality: Any research in which you / your child takes part will be treated in complete confidentiality so that you / your child cannot be identified by anyone reading the research. This confidentiality is provided by:

- **Anonymity:** All recorded research will be in a false name / number.
- **Security:** If retained, written material will be kept in a locked filing cabinet and destroyed by shredding after use. Recorded material (e.g. recordings of discussions) will be transcribed within two weeks of completion (with transcriptions stored as above), and the tapes either destroyed or wiped. Any pictorial or video material (for example from video diaries) will be analysed within two weeks and the tape (or other media) wiped.
- **Withdrawal:** You have the right for any piece of material that involves you / your child to be withdrawn at any time. Such material (and all records of it) will be destroyed through shredding or wiping.
- **Access:** You have the right of access to material about you / your child at any time. We undertake to make every effort to facilitate this right.

Withdrawal: You / your child may choose to withdraw from the research at any time. If so, all materials relating to you / your child will be shredded or erased from the record, and no reference will be made to you / your child in any written or published work thereafter. The decision will not be challenged.

If you wish to discuss any of the above, please contact Nalda Wainwright
E-mail n.wainwright@tsd.ac.uk
Tel: 01267 676767

Appendix B (iv): Consent Form: Photographs and Film



CONSENT FOR PHOTOGRAPHS AND FILM

Purpose: The research is being conducted by Nalda Wainwright at the University of Bedfordshire Under the Supervision of Professor David Kirk. The Research aims to study the implementation and impact of the New Foundation Phase. The outcomes of the study are:

To investigate how the learning outcomes of the Foundation Phase are impacting on children's development.

To apply the research more widely, publicising findings through conferences and written material

The research will form an important part of work leading to a PhD.

During the collection of data for the project photographs and film will help to illustrate some of the activities and learning experiences of the children.

These images will be used in the final PHD thesis and for presentations at educational conferences ONLY.

No: _____

CONSENT

Date: _____

Name of child: _____

I give permission for photographs and film footage to be used in the finished PHD thesis and for presentations at educational conferences.

Signed _____ (relationship to child)

I undertake to adhere to the conditions of research.

Nalda Wainwright, Researcher

Date: _____

Appendix B (v): Consent to Participate (adult)

CONSENT TO PARTICIPATE IN RESEARCH

Purpose: The research is being conducted by Nalda Wainwright at the University of Bedfordshire Under the Supervision of Professor David Kirk. The Research aims to study the implementation and impact of the New Foundation Phase. The outcomes of the study are:

- To investigate how the learning outcomes of the Foundation Phase are impacting on children's development.
- To apply the research more widely, publicising findings through conferences and written material
- The research will form an important part of work leading to a PhD.

Our Guarantee: We guarantee that all research will be open and honest, and that we will in no way carry out research of which you are unaware. The research will follow the ethical guidelines for educational research set out by the British Educational Research Association.

Confidentiality: Any research in which you take part will be treated in complete confidentiality so that you personally cannot be identified by anyone reading the research. This confidentiality is provided by:

- **Anonymity:** All recorded research will be in a false name, not your own.
- **Security:** If retained, written material will be kept in a locked filing cabinet and destroyed by shredding after use. Recorded material (e.g. recordings of discussions) will be transcribed within two weeks of completion (with transcriptions stored as above), and the tapes either destroyed or wiped. Any pictorial or video material (for example from video diaries) will be analysed within two weeks and the tape (or other media) wiped.
- **Withdrawal:** You have the right for any piece of material which involves you to be withdrawn at any time. Such material (and all records of it) will be destroyed through shredding or wiping.
- **Access:** You have the right of access to material about you at any time. We undertake to make every effort to facilitate this right.

Withdrawal: You may choose to withdraw from the research at any time. If you do so, all materials relating to you will be shredded or erased from the record, and no reference will be made to you in any written or published work thereafter. Your decision will not be challenged by us.

Comment: If you wish to comment on the accuracy or otherwise of material relating to you, you may do so at any time. I will be using the data to write-up Phd, and will also be writing publications and preparing other published material from the research, and will seek consent in general terms for use of data in published outputs. Any work co-written for publication will be negotiated on an *ad-hoc* basis.

Should you wish to comment, I can be contacted by telephone/text (numbers provided) or email (address provided).

In the case of ongoing work, this consent process will be repeated annually

No: _____

CONSENT CONTRACT

Date: _____
Name: _____
Date of birth: _____

I certify that I have had the matters on the previous page explained to me and discussed them, have a copy of that page, and that I agree to take part in the research.

I understand that this consent can be withdrawn by me at any time without notice on my part.

Signed _____ (Participant)

Renewal Date: _____

I undertake to adhere to the conditions of research as laid out in the preceding page at all times.

Nalda Wainwright, Researcher

Date: _____

A copy of this agreement will be furnished to all signatories within one week of its completion

Appendix B (vi): Research Ethics Form

UNIVERSITY OF BEDFORDSHIRE

Research Ethics Scrutiny (Annex to RS1 form)

SECTION A To be completed by the candidate

Registration No: 0926608

Candidate: Nalda Wainwright

Research Institute: Institute of Sport and Physical Activity Research (ISPAR)

Research Topic: Implementation of the New Foundation Phase in Wales

External Funding: Employer

The candidate is required to summarise in the box below the ethical issues involved in the research proposal and how they will be addressed. In any proposal involving human participants the following should be provided:

- clear explanation of how informed consent will be obtained,
- how will confidentiality and anonymity be observed,
- how will the nature of the research, its purpose and the means of dissemination of the outcomes be communicated to participants,
- how personal data will be stored and secured
- if participants are being placed under any form of stress (physical or mental) identify what steps are being taken to minimise risk

If protocols are being used that have already received University Research Ethics Committee (UREC) ethical approval then please specify. Roles of any collaborating institutions should be clearly identified. Reference should be made to the appropriate professional body code of practice.

This research will adhere to the BERA Ethical Guidelines for educational research (2004).

Voluntary informed consent will be sought for all participants. In the case of children, the procedures and policies of the selected schools will be followed in order to gain consent, prior to commencing any research.

BERA guidance for 'children, vulnerable young people and vulnerable adults' will be followed.

All data will be stored in line with privacy guidance and data protection legislation.

All staff and parents will be informed in writing of the nature of the research. The researcher will work with staff and Head Teachers to ensure participants are not placed under any form of stress.

Answer the following question by deleting as appropriate:

1. Does the study involve vulnerable participants or those unable to give informed consent (e.g. children, people with learning disabilities, your own students)?
Yes
2. Will the study require permission of a gatekeeper for access to participants (e.g. schools, self-help groups, residential homes)?
Yes
3. Will it be necessary for participants to be involved without consent (e.g. covert observation in non-public places)?
No
4. Will the study involve sensitive topics (e.g. sexual activity, substance abuse)?
No
5. Will blood or tissue samples be taken from participants?
No
6. Will the research involve intrusive interventions (e.g. drugs, hypnosis, physical exercise)?
No
7. Will financial or other inducements be offered to participants (except reasonable expenses)?
No
8. Will the research investigate any aspect of illegal activity?
No
9. Will participants be stressed beyond what is normal for them?
No
10. Will the study involve participants from the NHS (e.g. patients or staff)?
No

If you have answered yes to any of the above questions or if you consider that there are other significant ethical issues then details should be included in your summary above. If you have answered yes to Question 1 then a clear justification for the importance of the research must be provided.

*Please note if the answer to Question 10 is yes then the proposal should be submitted through **NHS research ethics approval procedures** to the appropriate **COREC**. The UREC should be informed of the outcome.

Checklist of documents which should be included:

- Project proposal (with details of methodology) & source of funding
- Documentation seeking informed consent (if appropriate)
- Information sheet for participants (if appropriate)
- Questionnaire (if appropriate)

Signature of Applicant:



Date: 4/2/11

Signature of Director of Studies:

Date:

This form together with a copy of the research proposal should be submitted to the Research Institute Director for consideration by the Research Institute Ethics Committee/Panel

Note you cannot commence collection of research data until this form has been approved

SECTION B To be completed by the Research Institute Ethics Committee:

Comments:

Approved

Signature Chair of Research Institute Ethics Committee:

Date:

This form should then be filed with the RS1 form

If in the judgement of the committee there are significant ethical issues for which there is not agreed practice then further ethical consideration is required before approval can be given and the proposal with the committees comments should be forwarded to the secretary of the UREC for consideration.

There are significant ethical issues which require further guidance

Signature Chair of Research Institute Ethics Committee:

Date:

This form together with the recommendation and a copy of the research proposal should then be submitted to the University Research Ethics Committee

Appendix C: Examples of disconfirming units of meaning

Physical Activity and Motor Development and Outdoor learning

Caitlyn struggling and Sam can't do big no. 8 in the air (A, 69, 21)

All running about except Connor who is huddled on the floor to keep warm (B, 84, 20)

There does not seem to be an outside activity this morning (A, 125, 1)

Tyler Harri and Lacey not doing all the actions (A, 133, 9)

Zion and Jack won't get up and dance (A, 133, 22)

children want to go on the field – not allowed? (B, 166, 1)

The session is much less active than I have seen with Karen (A, 174, 5)

The children are not really highly engaged in PA...typical sports day practice (B, 215, 1)

Ivan gets tired quickly and loses balance, he falls (B, 216, 9)

They have not been taught to hurdle (B, 218, 7)

Confidence and independence

Tyler and Ellie need a lot of support from Lisa to be able to write (A, 126, 17)

This session was intended that pupils were able to get on independently- it proved too challenging, the groups were unable to sustain independent work (B, 168, 9)

Motivation and engagement.

Sam is upset and frustrated (A, 71, 11)

Sam still frustrated (A, 71, 17)

Ebony seems sad and frustrated (A, 71,20)

Tommy Lee fussing with his knee (B, 86, 13)

Tyler fidgets, moves from his place he is only child not focusing on the story (A, 133, 5)

Tommy Lee doesn't seem to be doing as he is supposed to - he lies on top of the sandpit! (B 161, 20)

Appendix D: Draft questions for Interviews for Q 1.

Conceptualisation.

1. How were you first introduced to the Foundation Phase?

Remind teachers in discussion about the FIRST encounter with the new curriculum...via inset? At college? School staff meeting? LEA Training programme?

2. What were your INITIAL impressions of the Foundation Phase?

Encourage teachers to expand their ideas and impression? Try to remember how they felt about it. What did they like / not like? What did they think were good / bad features?

3. Can you tell me about any training you have had for the implementation of the Foundation Phase?

Was it school based? LEA based? National training?

4. What do you understand as the Aims of the Foundation Phase?

Try to focus on the general aims of the Foundation Phase at this point, not of specific areas of learning.

5. How is the Foundation Phase being received generally?

Implementation

6. Can you describe to me your Foundation Phase setting?

Encourage teachers to describe their classroom environment, the physical layout and the continuous provision.

7. Can you describe how you organise the provision?

Ask teachers for some examples of sessions? Perhaps linked to areas of learning.

*Discuss where Physical / Creative development sessions take place...is the hall timetabled for the class? Do the children have teacher led sessions outside? Do they have sessions in the class?
The organization of the classroom environment, how are resources organised, the physical layout, etc. how much time do children have in child led sessions.*

8. What do you expect children to be able to do in terms of their Physical development?

Encourage the teachers to explain what they think the children can do and what they should be able to do.

9. Can you describe what you think children will be able to do when they leave your class?

Try to ascertain the teachers understanding of the outcomes for Physical and Creative development

10. Are children more physically active in the Foundation Phase?

If so explain how ...in all aspects of the provision

Discuss the resources and equipment that encourage physical play?.....bikes, etc. levels in classroom?....

11. What is your understanding of a play-based curriculum?

Discuss the teacher's interpretation of play.

12. What are your expectations of the children in your class, what do you want them to be able to do?

Encourage teachers to talk about what they expect children to have learned in their class / the Foundation Phase.

13. What access do children have to the outdoor classroom?

Encourage teachers to describe the physical access, and the management of the use of the outdoors in focused/enhanced /continuous provision.

14. How do children use the outdoors?

*What types of physical activities? Encourage teachers to describe the types of activities the children do.
Natural environment??*

Outcome.

15. How do you know if you have done this well with the children in your class?

What will children be able to do? Understand? Apply?

16. How will you know if the Foundation Phase has been successful?

*What will be the impact on the class? Will there be any differences from KS 1 approach? What can the next class teacher expect from the incoming class?
What sort of child*

Appendix E: Interview 11, Teacher 1 B

1 Interview no 11]

2 **1. *First of all could you think back of when you were first introduced to the FPh training doc.?***

3 There were lots of talk about it coming in and that there was this new thing coming in that was going
4 to be all play based and there were lots of ideas about it before we actually knew what it was
5 coming in I think. There was a lot of - not worry – but misunderstanding I think perhaps all those
6 children – you know, there were all those myths and ideas I think that all children up to 7 were all
7 going to have to play and no formal writing or anything like that – so when it actually did start to
8 come in then and we saw the continuum things like that – the Pembrokeshire continuum - the
9 outcomes and realised that it's not actually all that much different - we still want the same standard
10 if not higher than I think it was before.

11 **2. *So what was your initial thoughts when you had to start implementing it? How did you***
12 ***feel about it initially?***

13 I was worried about it I was worried what changes it was going to be but I think straight away the
14 idea that they weren't all going to have to be – you weren't going to have the lessons and all that
15 sort of thing the same. My big bear was always was that you could be teaching little red riding hood
16 in the morning and then I'd expect them to jump to the Victorians or the great fire of London one
17 minute and back over the next to do something else and then we'd stop that to go out for PE and all
18 that sort of thing – so have it now that their learning is more mixed together & cross curricular
19 everything runs together and when you start to realise that's how it's going to be and that the
20 children have got to be more hands on and practically involved in things like that then I think it'
21 brilliant it's much better, yeah I love it now. I'm not saying I've got it all right now – but I think it
22 works much better now like I said it was always jumping from one thing to the next and it's not what
23 the younger children need - they can't cope with that at all

24 **3. *What about training - because the welsh assembly have - what sort of training have you***
25 ***had?***

26 I've done all the training with the authority we've had four days when it initially came and then
27 there was on outdoor module and then last week I went on the year two training because it's
28 coming in to year 2's now this year so I've been on all of that training. I didn't have any in college.

29 ***So all of it's been local authority based.***

30 ***Have there been anything in school – purely that the school have arranged in terms of F Ph?***

31 Couple of advisors and have been in and out a couple of times – the advisory teachers have been in
32 with different bits and pieces, and they came in when we first decided that we wanted to run with it
33 in year two before we had to - you know once it came into year 1 we wanted to run with it as well -
34 so they came in to help us set up our room and to talk with us planning. So I suppose we've had
35 quite a bit of help from them as well.

36 **4. *What do you understand as the Aims – if you had to in a nutshell – say what are the Aims***
37 ***of the F Ph?***

38 I suppose that children having to experience things it's not being told it's not just listening they
39 should experience everything because that's how you learn and I think I learn that way I have to do
40 something so I think that the children should have all the experiences I don't think they should be
41 sat I don't think that they should be told – so on that way I think the F Ph is brilliant for that - I think
42 that's what they want and that's what they need.

43 **5. So your very positive about it. How do you think it's been received generally? Do you get to**
44 **talk with other teachers in other settings?**

45 I think a lot of people think it's a phase. A lot of people think it's going back to how it was. A lot
46 people talk about an integrated day and that it's just going back to that which I don't remember so I
47 don't know and a lot of people think it's just a phase and it's a lot of effort and a lot of fuss to be
48 honest – even on the course last week I found it quite surprising that some year 2's have not made
49 any moves yet to even get rid of any tables or to think about having outdoor learning or anything like
50 that whereas I think I was hesitant at the start but you know once you run with it and I just think just
51 get out and do it. A couple of weeks ago the other staff were laughing cos ??? the other year 2, 'cos
52 we were only in one afternoon – we do the outdoor schools project - all our history is being done at
53 the castle so we've been out everyday and that's the way I think it should be - the children go off
54 and about they experience so much more then

86 on both feet. There's quite a few of them struggle with skipping some struggle with jumping so we
87 tend to look for that sort of thing throwing and catching, hitting a ball, dribbling with a football

55 **6. Can you very briefly describe to me your F Ph setting?**

56 We've got rid of a lot of our tables our smaller tables and the tables are in areas there's still space
57 for everyone to sit if they need to but it's not very often that they're all sat at tables and we've put in
58 definite areas we've got a library, a writing area with all the writing equipment, and they know that
59 there's a creative and a construction area, maths area, cooking and the kitchen part and the
60 children know very quickly where – you know - if they want something, they know that they need go
61 to that part for it.

62 **7. How do you organise your day?**

63 I think that were quite unusual from what I can gather going on courses and things - we set for
64 maths & language and I think were very focused and maths & lang. is our key business that's why we
65 are here & we've got to get the levels in the maths and in reading so in year two's we have a higher
66 and lower group for the maths & lang. we do the same books but just at different levels so mornings
67 are always maths and language and then afternoons tend to be our topic work and we do have our
68 child initiated time we only have it twice a week in year 2 which I'm not sure but fitting it in is
69 sometimes difficult so I think we've tried to do our child initiated with our topic work then they will
70 choose – you know were doing castles at the moment - they will choose what aspect they're going
71 to look at and then some of them may want to do art work but we would base it on castles some of
72 them may want to do construction but were linking it to the castle as well then and then we have
73 the other child initiated – which is their choice as well then.

74 **So most of the morning is focused sessions / time**

75 Yes, we have our big group and then our small group and then within those we have - I always a
76 writing focused group and then a reading group and then an independent group so then you've just
77 have one rather than trying to teach the whole group

78 **8. Thinking in particular about physical development - what do you expect children to be able**
79 **to do in terms of their physical development so thinking about all of the provision? can**
80 **you describe physically what do you think they should be able to do? What sort of skills do**
81 **you think they could develop? Things like fine motor / gross motor. Say now that you were**
82 **making a sort of assessment how well they were doing physically what would you be**
83 **looking forwhat sort of thing would you be looking at and sort of check, what would**
84 **you expect them to be able to do in year two? 10 mins**

85 I think balance the things we've done in gymnastics also things like kicking a ball, running, landing
86 on both feet. There's quite a few of them struggle with skipping some struggle with jumping so we
87 tend to look for that sort of thing throwing and catching, hitting a ball, dribbling with a football
88 things like that we look for

89 **What about in their child initiated or general movement around the continuous provision in the**
90 **classroom is there anything that you'd look for ensuring they can do physically in their day to day**
91 **getting on with things?**

92 I tend to look for the one's that just general moving to be honest some of them can be very clumsy
93 tripping over you tend to notice and note the one's that tend to fall a lot – just trip over or the one's
94 that always falling off a chair or could fall over their feet or fresh air things like that. Quite surprising
95 that with year 2's that there quite a few and day to day their fine motor skills as well then – a lot of
96 them struggle with threading or writing and those sort of things we would expect them to be able to
97 – use small beads and the lego some of them

98 **So you would expect them to have good**

99 Yeah, with some of them – not all of them, I would expect them to be able to use the lego or to
100 paint to use the smaller finer things like that as well. Yeah I would expect year 2's to be able work
101 with small scale pick up small things.

102 **9. When they leave your class in terms of physicality and you send them off to year three**
103 **what sort of things would you be able to say – what sort of things do you think you should**
104 **be able to say to the teacher right they can do this, this and this in terms of physicality?**

105 I would expect them to be able to use pencil skills, use scissors well, I'm thinking of fine motor skills
106 now – construction, I'd expect them to be able to use small pieces, the small lego the small connect
107 things like that & gross motor I'd expect them to be able to run confidently, jump, hop, skip, be able
108 to climb – we've got a small climbing wall and we...so they are traversing more now then? Yeah we
109 use that (the climbing wall) quite a bit and some of them are fantastic at that and then some of them
110 find that quite hard then.

111 **So how much climbing - you've got quite a lot of big climbing stuff around the school how much of**
112 **that does your class get access to?**

113 We have a set day for the conga equipment for things like that and then if it's not used we use it I
114 suppose about two or three times a week if we can get up there.

115 **& What have they got access to in terms of big play equipment on a day to day basis? 14mins**

116 We've got theoutside we haven't got bikes or anything like that but we've got large scale
117 building equipment building blocks and things like that we've got the hoops and skipping ropes and
118 we try to rotate during the week so that they have different equipment out. There's big jig-saw
119 puzzles things like that. We haven't got climbing equipment as such in our little yard *like climbing*
120 *frames, no, but they would use the conga when they go on the climbing wall* yeah, we do use that
121 sometimes in our PE lessons as well

122 ***So how many Physical Development / focused sessions would you have in a week? Timetabled in?***

123 Yeah, because we have to timetable the hall so we have one session in the hall a week in the autumn
124 and the spring term and then we haven't used it as much in the summer term because we have
125 swimming and we go outside but it just depends some weeks we might be outside for three or four
126 focused sessions a week we've been teaching them rounders and cricket and things like that and
127 some weeks it may be one or two it depends on what's going on in the week really

128 ***10. Do you think that children more physically active in the F Ph?***

129 I think this year we've pushed it a lot more - I think we've made an effort to push it more because
130 they need it, they need to get out and our boys especially after having a physical session they listen
131 better they are calmer and I really think that boys need that a lot - girls as well, but we do notice
132 sometimes - oh come on we'll go out and have a good run round we'll do some ball skills and they
133 are better. I don't know if it's the same in every setting

134 ***but for you in your setting - rather than the traditional Key Stage One type -***

135 probably yes because you've not got the constraints of 'you have to teach this many hours of this
136 and this every week' now because you can go with what interests them & like I say my lot this year
137 have really enjoyed the PE so we've done a lot of it because I think they've gained from it a lot as
138 well

139 ***11. What is your understanding of a play-based curriculum? 17mins20sec***

140 I don't think it's play based now I think people hear the term 'play based' and think that were just
141 providing games and everything and were not I think the activities that the children perhaps see as
142 play aren't - it's work it's not play and I think people just called it play

143 ***Do you think the children perceive it more like play?***

144 I think they see more games in there & I think they see - they know that they are not sat writing is
145 the same but I don't know if they do perceive it as play or not - I think they see it as hard work
146 actually, I think - really. I think when people say - last week my year 2's went up to meet their new
147 class in year 3 and one of the teachers in the juniors was only teasing me - "oh they are in for such a
148 shock all you do all day is play in the sand and water and there's going to be none of that going
149 outside" and I was just going - "it's not like that" - and I know he was only teasing me but they do
150 push the buttons by saying that all you do all day is play and it's not - it's hard work in there for the
151 children - it's constant - it's not ??

152 ***12.***

153 **13. What about the access- you said about the outdoors you've got for the physical - is there a**
154 **free flow inside/ outside when it's child initiated sessions? 19mins**

155 Yes were lucky we've fenced off part of the yard – it was the junior yard but it's been gated across
156 and that's our area so child initiated and in our focused sessions as well really we try to make sure
157 were outside as much as inside, again, I think that perhaps that both the year 2's and 1's teachers &
158 I'm really - I'd rather be outside than inside – I'd rather be out there so the children have to come
159 with me really.

160 **14. How do children use the outdoors?**

161 **You mentioned the outdoor schools project stuff – so what sort of things would they do**
162 **outdoors?**

163 We've done everything out there really the outdoor schools projects has just been really taking the
164 learning outside identifying an area that the children can use outside of school as well as inside of
165 school so they feel as though they've got some sort of ownership of it – but we've been up there
166 we've done treasure hunts, orienteering up there and we've used the race course.

167 **So do you have a separate site for your outdoor? 20mins**

168 Yes we do use the grounds as well but we do go off site up the race course we try and go once a
169 week, we have been up more but generally once a week and we plan the activities - we've done
170 language up there, we've done maths games but it does tend to be far more – well everything is –
171 they are moving around – all the writing is clip boards. We went on a treasure hunt then they had to
172 describe their journey so it is physical.

173 **So what is the environment like up there? I'm not familiar with it, is it woodland or..?**

174 There's a bit of every thing there's long grass there's lots of mowed area which we've been using as
175 our cricket pitch and as our rounders pitch for the year, well, for the two terms we've done it then
176 there's a wooded area and there's some scrub as well – 'cos we're hoping to use that for our forest

177
177 schools as well. I've nearly finished the training for that so were going to do that now as well in
178 September so we've already done a little bit of that and again it's just getting them outside as much
179 as possible. It's been really good.

180 **15. If I was to say to you at the end of the year, and they are going up to the next class, you've**
181 **talked about what you would expect them to be able to do - how will you know if you've**
182 **had success with your class at the end of the year?**

183 In terms of physicality?

184 That I've got the children to where I wanted them to achieve.

185 I think we look – we do stop and reflect and look over the children – you know it might be - we might
186 be just stood back a bit watching them during when there outside or something but we do try very
187 much especially this time of year I think just to step back and just watch them to see that they are
188 actually doing things that we think that they can do –

189 **Which would mean what then?**

190 with balls skills and with them moving around – I’m thinking in the physical sense now?

191 **& holistically as well**

192 Just sitting back and watching them really and seeing if they are producing you know - are they
193 reading the way I want them to read and are they writing at the level of description really have a
194 good look at everything that they are doing - talking between ourselves really and saying – ‘do you
195 remember when they were doing this and now there doing this’. It’s difficult to know exactly what
196 you want there - I don’t know.

197 **16. There’s nothing in particular – just a feel for what you think about it. So in terms of general**
198 **outcomes of the F PH you’ve mentioned quite a lot of physical skills and some other**
199 **broader key skills type things, at the end of F Ph what do you think children will be able to**
200 **do. As a child do you think there’ll be a difference to the way that children were coming**
201 **out of key stage one do you think they’ll have particular strengths will children have**
202 **developed different skills in different areas?**

203 I think they are for more independent. I think this years group compared to last years group I think
204 they will – not argue in a bad way – but if they’ve got a point that they think that they should be
205 doing something in this way then they will say I think that’s a good thing because we’ve said so much
206 to them – well try it and see, if you think you should do it that way then, do it that way – so I think
207 that they are more independent they now decide for themselves far more what they need to get in
208 terms of resources I don’t put anything out for them now they have to get what they need and then
209 if they use it all or make a mess then we say to them – why has this happened - and then they’ll say –
210 no I don’t think your right there – they will – they do challenge a lot – not in an aggressive way or a
211 rude way but they will say ‘hold on I think we should it this way’ or ‘I think it’s this’ and there not
212 frightened to have a go so in terms of that sort of thing I think it is different . If were writing a story
213 or something and they want to set it out in a certain way they will say rather than just saying I’ve got
214 to write the date and I’ve got to write this and this they want to do it their way which I think is
215 fantastic and that’s what we want isn’t it – to have independent learners

216 **What about socially do you see any differences amongst each other? 25mins**

217 No - I think they get on. They help each other more perhaps I think we’ve tried to do far more of -
218 they know the things that there good at they know how they can help each other and things like
219 that which is good . No, I think socially I wouldn’t have noticed a huge difference that ?? I’ve got
220 some very independent, very strong willed children that will lead others. I think they are more
221 independent and they are more able to speak up and give their point of view now and trying things
222 which I think is what a lot of the F Ph is for isn’t it that they are taking control of what they need to
223 do isn’t it - were just there to guide and help and let them try things out really.

224 **Thank you**

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227

Appendix F(i): Harter Scale Questions

ITEM 15

This boy is pretty good at skipping. Are you:

Really good
at skipping

OR

Pretty good

4

3

Sort of good

OR

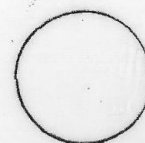
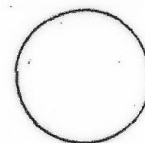
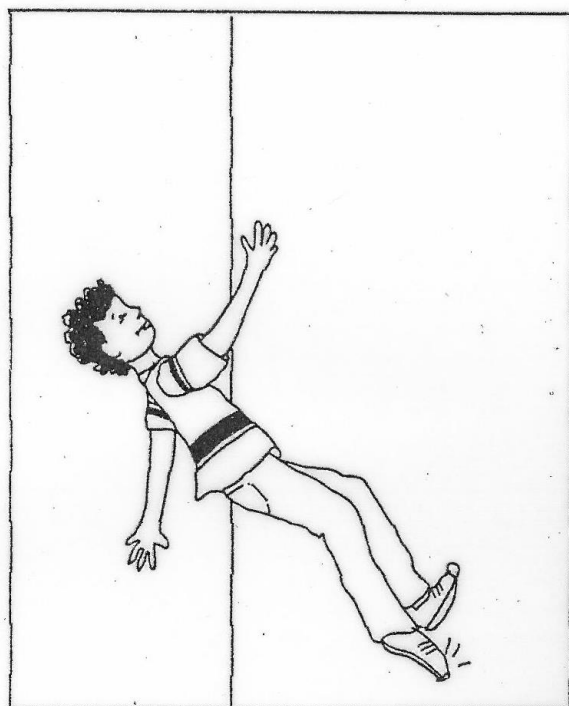
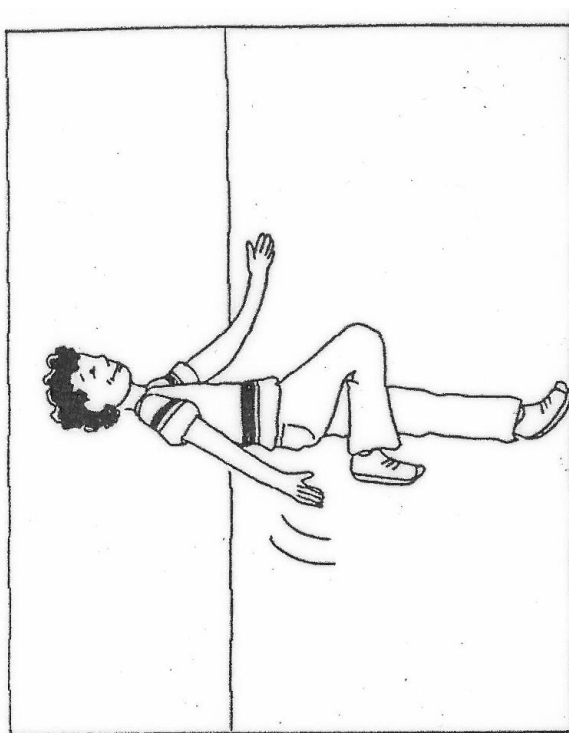
This boy isn't very good at skipping. Are you:

Not too good
at skipping

2

1

Appendix F (ii): Harter Scale Example



Appendix G: Leuven Scale for Well-being and Involvement

The Leuven Scale for Well-being

| level | Well being | Signals |
|-------|-----------------------|---|
| 1 | Extremely low | The child clearly shows signs of discomfort such as crying or screaming. They may look dejected, sad, frightened or angry. The child does not respond to the environment, avoids contact and is withdrawn. The child may behave aggressively, hurting him/herself or others. |
| 2 | Low | The posture, facial expression and actions indicate that the child does not feel at ease. However, the signals are less explicit than under level 1 or the sense of discomfort is not expressed the whole time. |
| 3 | Moderate | The child has a neutral posture. Facial expression and posture show little or no emotion. There are no signs indicating sadness or pleasure, comfort or discomfort. |
| 4 | High | The child shows obvious signs of satisfaction (as listed under level 5). However, these signals are not constantly present with the same intensity. |
| 5 | Extremely high | The child looks happy and cheerful, smiles, cries out with pleasure. They may be lively and full of energy. Actions can be spontaneous and expressive. The child may talk to him/herself, play with sounds, hum, sing. The child appears relaxed and does not show any signs of stress or tension. He /she is open and accessible to the environment. The child expresses self-confidence and self-assurance. |

The Leuven Scale for Involvement

| level | Well being | Signals |
|-------|-----------------------|--|
| 1 | Extremely low | Activity is simple, repetitive and passive. The child seems absent and displays no energy. They may stare into space or look around to see what others are doing. |
| 2 | Low | Frequently interrupted activity. The child will be engaged in the activity for some of the time they are observed, but there will be moments of non-activity when they will stare into space, or be distracted by what is going on around. |
| 3 | Moderate | Mainly continuous activity. The child is busy with the activity but at a fairly routine level and there are few signs of real involvement. They make some progress with what they are doing but don't show much energy and concentration and can be easily distracted. |
| 4 | High | Continuous activity with intense moments. The child' activity has intense moments and at all times they seem involved. They are not easily distracted. |
| 5 | Extremely high | The child shows continuous and intense activity revealing the greatest involvement. They are concentrated, creative, energetic and persistent throughout nearly all the observed period. |

Appendix H (i): Social Play Continuum (1)

Side 1: THE SOCIAL PLAY CONTINUUM—A TOOL FOR PLAY OBSERVATION, PUPIL ASSESSMENT AND EVALUATION OF AREAS OF PROVISION

Observation start time: _____ Children entering play: _____

Area of provision: _____ Children leaving play: _____

Observation finish time: _____

L = Language *A = Action observed* *L/A = Language and Action Combined*
RL = Reciprocal language *RA = Reciprocal Action* *RL/RA = Reciprocal language and reciprocal action combined*

| ASSOCIATIVE DOMAIN | SOCIAL DOMAIN | HIGHLY SOCIAL DOMAIN | COOPERATIVE DOMAIN |
|--|--|--|---|
| <p>A: looks towards peers</p> <p>A: Watches play</p> <p>A: Imitates play</p> <p>A: Object offered, not accepted</p> <p>A/L: Object taken, altercation</p> <p>A: Parallel play period</p> <p>L: Self-talk</p> <p>A/L: Comment on action directed at peer; peer does not respond</p> | <p>A: Smiling</p> <p>A: Laughter</p> <p>L: Play noises, play voice</p> <p>RA: Eye contact made</p> <p>A: Object taken, no altercation</p> <p>RA: Object offered and received</p> <p>L/A: Consent sought and object accessed.</p> <p>L: Approval sought, not given</p> <p>RL: Approval sought and given</p> <p>L: Instruction given, no response</p> <p>L/RA: Instruction given, positive response</p> <p>L: Question asked, no response</p> <p>RL: Question asked, response</p> <p>L/RA: Comment on own action/described intent directed at peer, peer looks</p> <p>RL: Comment on own action/described intent directed at peer, verbal response</p> | <p>RA: Offering/accepting of objects evident</p> <p>RL: Dialogue a mix of activity-related and non-related but a theme is evident</p> <p>RL: Comment on own action/described intent with acknowledgement leading to extended exchange</p> <p>RL: Sporadic dialogue develops role play themes</p> <p>RA/L: Eye contact/laughter, (play noise) combined as behavioural cluster</p> <p>RA/RL: Brief reciprocal sequences, e.g. giving/following instructions seeking/giving approval offering/accepting objects asking/answering questions</p> <p>RL/RA: New ideas or resources have impact on developing theme</p> | <p>RA: Offering/accepting objects sustains/extends play theme</p> <p>RL: Sustained dialogue is activity related and clear theme(s) emerge</p> <p>RL: Explanations/descriptions utilised</p> <p>RL/RA: New idea/resource extends play and is sustained</p> <p>RL/RA: Children display a shared understanding of goals</p> <p>RL: Offering and accepting verbal help</p> <p>RA: Offering and accepting physical help</p> <p>RL/RA: Verbal and physical help combined</p> <p>RL/RA: Problem identified and solved</p> <p>RL/RA: Dramatic scenarios enacted linked to play theme(s)</p> |

Side 2: THE SOCIAL PLAY CONTINUUM—REFLECTING ON AND CATEGORISING OBSERVED PLAY

Increasing levels of reciprocity and momentum

| Characteristics of associative play | Characteristics of social play | Characteristics of highly social play | Characteristics of cooperative play |
|--|---|--|--|
| <p>Self-talk does not elicit a response</p> <p>No/very little dialogue</p> <p>No/very little eye contact</p> <p>Seemingly little regard for proximity of peers</p> <p>Limited periods of peer interaction</p> <p>Overtures ignored</p> | <p>May involve much movement indoors or outdoors</p> <p>Children leave and join the play at frequent intervals</p> <p>Associative players often nearby</p> <p>Little development of play ideas, often repetitive</p> <p>Little shared understanding of goal achievement</p> <p>Dialogue does not always relate to activity</p> <p>Play punctuated by periods of associative play</p> <p>Altercations evident when play returns to associative</p> <p>Adult intervention may often be sought</p> | <p>May involve movement or one location</p> <p>Group relatively stable with some entering or leaving</p> <p>Suggestions emerge which begin to extend ongoing play</p> <p>New objects/resources brought to play but may not become integral to play</p> <p>Sporadic evidence of shared understandings of goal orientation</p> <p>Role play may be evident with some combined dramatic intent</p> <p>Interruptions/altercations may be evident when play returns to social</p> <p>Adult intervention seldom sought</p> | <p>Players remain predominantly in one location</p> <p>Shared understanding of goal orientation</p> <p>Players remain until goals achieved; new goals identified</p> <p>A highly imaginative use of ideas and materials as play themes are taken on board and explored</p> <p>Players seek additional resources to extend their play themes</p> <p>Role play has clear dramatic aspects</p> <p>A relative absence of play noises</p> <p>Absorption in task with extended levels of concentration</p> <p>Altercations are resolved in play as problem-solving activity</p> <p>Play achieves a finished product (where design is involved)</p> <p>Adult intervention not sought until completion</p> |

Appendix H (ii): Social Play Continuum (2)

Appendix I (i): Clusters of relevant meaning.

1. Gross & fine Motor development

1. Balance 11(85)
2. Kicking a ball, running, landing on both feet. 11(85)
3. Skipping 11(86)
4. Throwing and catching, hitting a ball, dribbling with a ball. 11(87)
5. Run confidently 11(106)
6. Jump hop skip be able to climb 11(107)
7. Be able to catch and receive. 12(84)
8. To be able to pass and throw with good hand eye co-ordination. 12(84)
9. Be able to run and change direction. 12(85)
10. Jump, land on two feet. 12(85)
11. Land from one foot to the other. 12(86)
12. Link those actions into a sequence. 12(86)
13. Climb and swing with confidence. 12 (87)
14. The first term I spend a lot of time making sure gross motor skills are developed. 12(98)
15. Co-ordination and balance. 12(100)
16. Jumping skipping running balancing. 14(100)
17. Fine motor, gross motor skills. 14(103)
18. A lot of gross motor work is done outside. 15(78)
19. Climbing, jumping. 15(78)
20. Be able to sit on a chair. 15(86)
21. Able to dress themselves. 15(90)
22. Put on coats. 15(92)
23. They put on wet weather gear continually. 15(92)
24. The climbing frame is just playtime or small group. 15(97)

25. In the builders yard they make lots of things like bridges and stepping-stones in child initiated time. 15(98)
26. In the garden have free digging area and they love to dig. 15(99)
27. Basic gymnastics, basic shapes, long sit, short sit, pencil, star. 16(93)
28. Climbing. 16(94)
29. Stepping-stones. 16(95)
30. Crossing the midline. 16(95)
31. Confident to run, hop, skip, jog, stop and go on demand and gymnastic shape.16 (142)
32. Variety of fine and gross motor activities. 17(88)
33. Climbing frames. 17(92)
34. Gymnastic type stuff, jumping to and from. 17(92)
35. Access to lots of bikes, to pedal forwards and backwards. 17(93)
36. Get their bodies into different positions. 17(104)
37. Dance warming up and stretching. 17(105)
38. Apply enough pressure to make marks. 17(101)
39. Gross motor all very confident. 17(124)
40. Natural climbers 18(26)
41. Hand eye coordination 18(73)
42. Travel safely. 18(73)
43. Body shape. Balance. 18(73)
44. Running skipping, hopping, jumping. 18(77)
45. Skip balance along a rope. 18(78)
46. Balancing and travelling, running. 19(67)
47. Make shapes confidently. 19(68)
48. Dance. 19(70)
49. Free movement. 19(70)
50. Spin over the ropes. 21(59)
51. Find balance. 20(74)

52. To have a certain degree of control over their actions. 13(106)
53. To be able to co-ordinate throwing kicking that sort of thing. 13(106)
54. To run and all the diff ways of travelling in a controlled way. 13(132)
55. To throw and kick a ball. 13(132)
56. To have an element of balance and control and understand how to land.
13(134)
57. They are using their physical skills more every day especially their gross
motor. 13(159)
58. We do lots of brain gym, crossovers. 20(74)
59. Big believer in body tension. 20(74)
60. reduction in children with motor skills issues, noticeably. H1
61. We do a lot of PE we have a games session once a week, PE, swimming,
forest school stuff, gardening, DH1
62. Be able to thread small beads and lego. 11(97)
63. Paint, to use the small finer things 11(100)
64. Pencil skills 11(105)
65. Use scissors well 11(105)
66. Construction, small lego, small connect 11(106)
67. To have good fine motor skills. 12(78)
68. To be able to hold a pencil. 12(79)
69. Fine motor, gross motor skills. 14(103)
70. Hold a pencil properly, paintbrushes, big chucks, thin chucks, more
equipment not just pencils. 14(131)
71. Hold scissors. 14(132)
72. Hold a pencil correctly. 15(75)
73. Work on normal size paper. 15(75)
74. Scissor skills. 15(88)
75. Pencil grip and scissor skill. 16(96)
76. Hold a pencil and write their name. 16(140)

77. Cut confidently in a straight line. 16(141)
78. Variety of fine and gross motor activities. 17(88)
79. Threading, small pins and boards. 17(89)
80. Pincer grip like holding pens, cutting paintbrushes. 17(90)
81. Secure pencil grip. 17(101)
82. Apply enough pressure to make marks. 17(101)
83. Good fine motor skill. 17(124)
84. Manipulating small apparatus. 18(73)
85. Fine motor skill. 21(56)
86. Pre writing. 21(56)
87. To hold the pencil and to have control of the pencil. 13(117)
88. How much strength they have in their hand. 13(118)
89. Fine motor to put detail into a picture hands and legs and things. 13(135)
90. Put detail in things draw a person with quite a lot of detail. 13(135)
91. To be able to manipulate fine construction resources. 13(136)
92. I would say we have the strongest group of writers in yr 2 we have ever had. And children who can write independently and use a range of strategies to support their writing skills. It is noticeable. H1

III. Use of the outdoors

1. We try to make sure we're outside as much as inside. 11(156)
2. The outdoor schools project has been taking the learning outside. 11(163)
3. Identifying an area outside as well as inside the school so they've got ownership of it. 11(164)
4. We've done treasure hunts, orienteering we've used the racecourse. 11(166)

5. There's long grass, lots of mowed areas. 11(174)
6. There's a wooded area and some scrub. 11(176)
7. If they choose they could work outside. 12(23)
8. Indoors and outdoors are blended. 12(24)
9. Most of the activities are outside. 12(26)
10. The classroom doors are always open. 12(143)
11. We try to plan one activity every session outdoors. 12(144)
12. They are always in and out back and forth. 12(148)
13. We've got Kong climbing frame, that's timetabled. 12(148)
14. Every Friday we walk up the racecourse which is a huge open wooded area, open grassland. 12(151)
15. We take them up there the whole afternoon and do outdoor activity cards and some site activity cards. 12(152)
16. The outdoors makes a huge difference. 12(164)
17. A different type of environment. 12(167)
18. Children can express themselves differently. 12(167)
19. They can express themselves more freely. 12(169)
20. To be part of the natural world I think it makes children a lot calmer. 12(172)
21. When we come back in from outside, after 15 mins they are very very calm. 12(173)
22. They are relaxed with one another. 12(175)
23. As if they are ready to learn. 12(176)
24. We take maths activities outside. We take language activities outside. 14(56)
25. We can't have the whole class outside of there is no adult outside. 14(146)
26. Boys will say can we take the lego outside. 14(148)
27. Things like minibeasts naturally take itself outside. 149(149)

28. They usually need an adult as they need to go and explore the grass areas that we haven't got outside the class. 14(150)
29. One group could be doing maths where they are doing jumps, or we did skittles the other day, another group are outside playing skittles, adding numbers in their head. 14(175)
30. We do language they are acting out the story outside on the stage so they're moving about. 14(180)
31. The climbing frame is just playtime or small group. 15(97)
32. In the builders yard they make lots of things like bridges and stepping-stones in child initiated time. 15(98)
33. In the garden have free digging area and they love to dig. 15(99)
34. Grass area is free flowing during planning .15(97)
35. They are outside unless it is very windy and torrential. 15(101)
36. We go to Scolton manor for forest school. 15(104)
37. We are starting to use the racecourse for an outdoor area. 15(105)
38. If fine weather 80% plan (choose) to be outside. 15(124)
39. Twice a day they can go outside. 16(118)
40. At least one small group outdoors if possible. 16(119)
41. 5 weeks at Scolton Manor (forest school), leaf collages and planned outdoor curriculum. 16(124)
42. Have been donated trees and willow to develop the school. 16(126)
43. Either nursery or reception are outside. 18(91)
44. They have access to the bigger field when the juniors are in lunch. 18(93)
45. They don't have access to the grass and willow in child initiated, but do with an adult with them. 18(95)
46. Appreciate the environment from being outside in it. 18(107)
47. Going outside. 19(19)
48. They will have daily outdoor time. 19(49)
49. Doing lots of subjects outdoors not just PE. 19(50)

50. In all weathers. 19(50)
51. We have 2 planters as a boundary although they can go beyond. 21(74)
52. Can go in and out as long as there is an adult aware. 21(75)
53. Do science, knowledge and understanding stuff, gardening, maths, building brick walls and subtraction. 21(77)
54. Do art out there, circle time, reading storytelling and den building. 21(78)
55. I always use the willows. 21(81)
56. Use the grass mound that is brilliant for story telling. 21(83)
57. Map work. We do literacy and hide letters to find and make up words. 21(84)
58. Not free flowing will be next year. 20(93)
59. The children said next year they want to do more gardening and be outdoors more. 20(95)
60. The parents are very outdoorsy. 20(100)
61. We have eco club and sustainable schools stuff. 20(100)
62. Children like to be outside. 20(101)
63. They like to be outside doing practical jobs. 20(102)
64. We've got poly tunnel, and pond dipping. 20(102)
65. We do planting, worm investigation, hedgerows and living things, storytelling, maths and ICT outside, basically anything you do inside, outside. 20(103)
66. Art outside using natural resources, and just being outside. 20(105)
67. Simple orienteering. 20(108)
68. I've taken them outside and we played bowling addition and they were bowling and we had a reason for adding up their score they loved it. 13(53)
69. It is free flowing. 13(144)

70. Our classroom opens on the playground and during planning time they can free flow within reason, 13(144)
71. We have done a lot of outdoor schools activities at Scolton manor so doing all out maths and language outdoors. 13(151)
72. We've been going up the racecourse to try to do literacy activities outdoors. 13(152)
73. They do things outside that are more creative without adult output. H1
74. For example they have planned maths activities, And some are indoor and some are outdoor H1
75. Every class is able to go out with wet weather gear. Nursery have full day of outdoor on a Wednesday and are out and about every day. DH1
76. We are going out the children are classifying this type of leaf that type of leaf, their orientation they are using their geographical skills out there, Welsh happens out there. DH1
77. Actively building in the outdoors so it is done. (M1)
78. The outdoors is a fundamental part, absolutely fundamental that's why the outdoors was put in as a requirement. (M1)
79. to move outside every classroom has a door that leads to the outside we were encouraging always at least a quarter of the class outside for every session (LEA)
80. as long as the weather is dry the doors are open. (LEA)
81. We invested in wet weather gear for all children so unless it was torrential down pour the door was open and the children are going in and out. (LEA)
82. Most schools are trying to develop some element of the natural environment (LEA)
83. We have plot of land where we have created a forest school and every child in school accesses it regularly. (LEA)

84. outdoor learning, involving a range of adults not just teachers a situation in the classroom where we aim for the children to speak more than the teacher. (LEA)

IV. Independence / ownership of learning

1. They are far more independent. 11(203)
2. They decide for themselves what they will need in terms of resources. 11(207)
3. They do challenge a lot, not in an aggressive way or rude way but they will say 'I think we should do it this way' or 'I think it's this'. 11(210)
4. They are taking control of what they need to do. 11(222)
5. Identifying an area outside as well as inside the school so they've got ownership of it. 11(164)
6. You can go with what interests them. 11(136)
7. If they choose they could work outside. 12(23)
8. Children are allowed to express their feelings and views. 12(22)
9. A lot more independent. 12(113)
10. Independence of the children. 14(28)
11. To make them more in control of their own learning. 14(28)
12. The independence is remarkable. 14(30)
13. The (areas are all) photographed, labeled for the children so they come and go as they please and take what they need. 14(54)
14. One group will always be independent. 14(63)
15. Getting themselves into groups. 14(109)
16. They can get themselves into groups. 14(117)

17. Cooperation, being able to cooperate, they do all these things better because we've allowed them to take control of their own learning. 14(202)
18. They are a lot more independent than they were before Foundation Phase. 14(203)
19. Ownership of what they are doing. 15(41)
20. Doing it for themselves. 15(42)
21. Be confident and independent. 15(116)
22. Able to make choices. 15(116)
23. Have skills to carry out independently. Have a go at things. 15(117)
24. Independent learners. 15(118)
25. Children plan what they are going to learn. 17(29)
26. Reviewing what they think they have learnt. 17(30)
27. They are much more independent in their learning. 17(112)
28. Independent in learning. 17(120)
29. More independent. 19(18)
30. Proactive in their learning. 19(18)
31. To be independent. 19(57)
32. Access equipment and ideas independently. 19(57)
33. Decide how they are going to learn things and how they are going to present it. 19(58)
34. More ownership. 19(60)
35. Children taking ownership for where how and what they are going to learn. 19(29)
36. To create a more independent child. 21(36)
37. Have the skills and control over what they are doing. 21(38)
38. More involved in the planning. 21(39)
39. More interest and they have more at stake. 21(39)
40. Children having more choice. 21(90)

41. Independence. 21(101)
42. Independent. 20(27)
43. Have the tools themselves to do creative and imaginative as well as academic learning. 20(27)
44. Independence of children, who get on with a task even if they are being stretched. 20(29)
45. They did the sports so everyone could have a medal; they organised it all and chose the events. 20(58)
46. To have an element of independence in their learning. 13(138)
47. An element of responsibility. 13(139)
48. To know what they need and where they need to go to get it. 13(140)
49. The children can be given a task and can just get on with it. 13(167)
50. We start our planning by asking them what they want to learn to do and they are far more enthusiastic to do an activity because it's what they wanted to do. 13(169)
51. Independence within schools that I don't think children in the past have had, and that's a huge difference, and actually, the Foundation Phase principles we are trying to apply in KS2 such as the questioning skills, the more independent work, it does have an impact. H1
52. these children are used to taking ownership of deciding perhaps which way they are going to record their work, and reflecting and saying well next time and I am going to do this. DH1
53. These children are coming up far more independent, they're used to organising the equipment. DH1
54. to fulfill the pedagogy of what the f ph was about, getting these children being independent, DH1
55. Doing it for themselves. 15(42)
56. they feel more involved in the outcomes of their education (M1)
57. you are seeing that the kids are actually self-directing (M1)

58. we see a child who can make choices not just about the resources and equipment they are going to use, but about the way they learn best, children who are able to articulate how they learn best (LEA)

V. Experiential

1. Children having to experience things. 11(38)
2. It's not just listening they should experience everything. 11(38)
3. We do language they are acting out the story outside on the stage so they're moving about. 14(180)
4. Experiential learning through play. 17(28)
5. Children learn through experience. 17(47)
6. They need to feel touch explore. 18(26)
7. Lots of concrete opportunities. 18(45)
8. Very active and stimulating. 18(47)
9. Concrete activities. 18(102)
10. To deliver the curriculum in a more hands on approach. 13(51)

VI. Confidence

1. Run confidently. 11(107)
2. They are not frightened to have a go. 11(211)
3. Climb and swing with confidence. 12 (87)
4. To be confident. 12(110)
5. To have the confidence to have a go at anything. 12(110)
6. Knowing it's not a bad thing to get it wrong. 12(110)
7. Spatial awareness, they're much more confident at finding a space by themselves. 14 (108)

8. Be confident and independent. 15(116)
9. Have the confidence and independence to have a go. 21(63)
10. Confidence. 21(101)
11. Not afraid to put pen to paper. 20(113)
12. They can explain this is how I've done it and this is why I've done it.
12(111)
13. It's about them thinking through a hands on approach to learning.
12(129)
14. the Foundation Phase has created much greater physical confidence
(M1)
15. enabling those children to feel confident about what they were doing.
(M1)
16. how more confident the children were (M1)
17. We have found the children are much more confident, (LEA)
18. , much more able to verbalise what they would like to do (LEA)
19. Children are confident about making choices about what they want to do
what they can do with their body, what they can expect their bodies to do,
far more confident and more willing to have a go. (LEA)

VII. Well-being

1. After a physical session they listen better, they are calmer. 11(130)
2. Children are allowed to express their feelings and views. 12(22)
3. I look at their well-being. 12(159)
4. Children can express themselves differently. 12(167)
5. They can express themselves more freely. 12(169)
6. To be part of the natural world I think it makes children a lot calmer.
12(172)

7. When we come back in from outside, after 15 mins they are very very calm. 12(173)
8. They are relaxed with one another. 12(175)
9. As if they are ready to learn. 12(176)
10. Well-rounded children. 17(124)
11. Express their feelings. 18(100)
12. Be emotionally happy. 18(100)
13. Enjoy the curriculum. 18(101)
14. Good understanding of each other. 18(102)
15. Understand themselves, what they like doing physically. 18(108)
16. To have love for being physical. 18(109)
17. Understanding the impact exercise on your well-being. 18(109)
18. We have a real ethic of its not a competition, it's about improving own performance. 20(62)
19. Happy learners. 20(112)
20. Not frightened of coming into school. 20(112)
21. Big friendship network. 20 (113)
22. Enjoy being here. 20(113)
23. busy little people engaged and having fun (M1)
24. Putting the children right at the centre of their learning. 16(28)
25. Getting kids involved and really engaged is the crux of it. 16(35)
26. Very child centered. 17(28)
27. Listening to children and responding to their thoughts. 18(27)
28. They feel their ideas are valued. 21(105)
29. Fun and interesting. 16(30)
30. Making it a lot more fun. 13(58)
31. They are enjoying what they are doing rather than seeing it as a task. 13(59)

IX. Physical activity (more physically active?)

1. I would say yes especially our year 1 group they are very physically active. 12(118)
2. There is a huge emphasis to be physical and active in the indoor and outdoor environment, especially the outdoors, they haven't got a choice they have to be physically active. 12(120)
3. Yeah because they are not sat a table all morning. 14(173)
4. One group could be doing maths where they are doing jumps, or we did skittles the other day, another group are outside playing skittles, adding numbers in their head. 14(175)
5. We do language they are acting out the story outside on the stage so they're moving about. 14(180)
6. Yes because you've got no constraints. 11(135)
7. Children are more active in the Foundation Phase. 15(123)
8. More children busy than sitting at tables. 15(123)
9. Far more active than being in inside. 15(125)
10. Don't often find them sitting down. 15(126)
11. They are more active. 16(102)
12. More sensory then before so more active. 16(104)
13. Includes a lot of movement. 18(24)
14. It about being active. 18(26)
15. Its and active curriculum. 18(27)
16. Very active and stimulating. 18(47)
17. Yeah definitely. 18(83)
18. I have brought a lot more movement into my teaching. 18(84)
19. A curriculum full of movement. 18(101)
20. They will be more active. 19(49)

21. Yea. 21(68)
22. Yeah, definitely. 13(157)
23. When we plan we try and make sure that there is some evidence based work to go in their files, but there are practical hands on activities alongside.13 (157)
24. They are just moving around a lot more, not sitting at a table all the time. 13(160)
25. LSA will supervise their outdoor work because they will be doing lots of practical physical stuff. 19(45)
26. Hugely increased physicality. DH1
27. We do a lot of PE we have a games session once a week, PE, swimming, forest school stuff, gardening, that physicality and being out in the air having a purpose and reflecting on what they have done, has been fantastic for them. DH1
28. Children being more active in their learning. 21(89)
29. Just being active in their activities. 12(130)
30. They are not passive they are active learners DH1
31. encouraging children from day one to move around the room freely (LEA)

X. Play

1. I don't think it is play based now. 11(140)
2. It's work not play and I think people just call it play. 11(142)
3. I think if they changed the word play and called it work it would be a lot easier, or thinking time would be a lot better. 12(125)
4. We interpret play as providing them with opportunities to challenge themselves. 12(128)

5. Not really free playing, adults are directing it and helping if pupils need skills developing. 15(110)
6. Children see it as playing, but the resources you put their guide them towards the learning. 16(56)
7. Needs to be purpose to the playing. 16(60)
8. Experiential learning through play. 17(28)
9. Skills are repeated through their play. 17(48)
10. All activities are planned with play in mind. 17(49)
11. Role-play. 19(29)
12. Play through collaborative work. 19(30)
13. Opportunities for them to be pushed and extended through their play. 19(32)
14. Got to be fun. 20(87)
15. Driven by enjoyment and children's desire to learn. 20(88)
16. For me its enjoyment. 20(89)

XI. Spatial awareness

1. Spatial awareness, they're much more confident at finding a space by themselves. 14(108)
2. Jump land coordinate spatial awareness and hand eye coordination. 17(126)
3. Allows them to understand their space in the world. 18(25)
4. Understanding space. 18(29)
5. Spatial awareness. 18(74)
6. Good understanding of space. 18(75)
7. Knowledge of levels. 19(70)
8. To have an awareness of space. 13(105)
9. Allows them to understand their space in the world. 18(25)

10. Allowing them to go into their own spaces. 18(33)
11. Be able to coordinate so are safe in a bigger space. 18(76)

XII. Cooperation

1. Work as a group. 14(185)
2. They can take turns better. 14(185)
3. Cooperation, being able to cooperate, they do all these things better because we've allowed them to take control of their own learning. 14(202)
4. Sharing and collaborative talk waiting your turn and PSE. 16(85)
5. Can work in small and big groups. 17(125)
6. Be able to concrete. 18(102)
7. Work in pairs and groups. 19(58)
8. Skills from paired work, negotiation. 21(91)
9. Ability at group work. 21(103)
10. Very gelled as a group. 21 (104)
11. To work with a partner and be able to do mirroring games. 13(133)
12. Being able to share. 13(141)
13. To learn to wait their turn and wait for their needs to be met. 13(137)
14. Turn taking being kind caring person understanding about right and wrong. 13(140)
15. Cooperative, inquisitive, literate, numerate, H1
16. For instance in the watersports the instructors commented and have done in the past how well the children cooperated and worked together. H1
17. nobody has told them, that's just them having the cooperative skills the confidence to come up with those things independently. H1
18. Lot more working together. DH1

19. These children are used to working in groups sharing and taking turns, it happens every single day. DH1
20. Playtimes are a cooperative, busy engaging, hassle free, its good, very good. (H1)
21. There is more to it than physical development, it is about being part of teams learning certain skills talking communicating listening to each other. 12(93)
22. Good communication skills. 18(100)
23. The skills, social skills and group work. 21(90)

XIII.Lack of prescription.

1. Yes because you've got no constraints. 11(135)
2. Freedom to cover the skills in whatever way you like. 15(46)
3. Freedom to go with the children's interest. 15(48)
4. Important to have flexibility. 18(32)
5. Really flexible. 18(49)
6. It is planned but has to be flexible as well. 20(49)
7. The f ph is a creative way of delivering the curr.13 (60)
8. They do have allocated time planned for them and they also have free time where it is less structured. H1
9. The curriculum is open for interpretation (LEA)
10. It became very apparent as we went out into schools, in the way people worked together, the resources that were available the preconceived ideas, every school was different we are not a homogenous group. So every Foundation Phase was going to reflect the area. (LEA)

XIV.Motivation.

1. Children are far more engaged. 15(130)
2. Children go back and re make or re do work to take home and show parents. 15(131)
3. Enthusiasm for learning. 21(101)
4. Creating learners that want to learn.20 (26)
5. Excited about learning. 21(26)
6. To get children more enthused to what their actually doing. 13(55)
7. They are much more self-motivated much more independent H1
8. Attention is amazing. 21(107)
9. Children off doing different things. 18(47)
10. Children have their own discoveries. 15(41)
11. Learning through experiencing it and doing. 15(41)
12. more engaged in their education (M1)

XV. Safety.

1. Rough idea of when things are safe or not. 16(150)
2. Being safe. 18(76)
3. Understand the environment. 18(106)
4. Trim trail so they can learn to use it safely. 21(58)

XVI. Miscellaneous

1. Making good judgments about whether the child has gained the skill. 17(51)
2. Prepositional language, storytelling. 18(74)
3. Creative movement to music. 18(74)
4. Track with eyes and feet. 18(78)
5. Exercises with one hand closed, one open, brain gym. 18(78)

- 6.** Before Foundation Phase physical development was seen in isolation.
18(83)
- 7.** Have good body awareness. 18(106)
- 8.** Know what keeps them healthy. 18(106)
- 9.** Varied access to the curriculum. 19(19)
- 10.** More cross curricular. 19(20)
- 11.** Use gym mod 1 (PESS). 19(67)
- 12.** Listening skills are excellent. 21(106)
- 13.** Very strong oracy. 21(107)
- 14.** Skills away from catching ball throwing etc. 20(73)
- 15.** Understand that physical development is not just related to how fast and strong you can be related to all aspects of learning. 20(77)
- 16.** Athletics outside and one session a week the PPA teacher uses the Mugga.
20(106)
- 17.** To have patience. 13(138)
- 18.** Ready to be in year 2 socially and academically. 13(141)
- 19.** Every child has a PDP that is their personal journey that will follow them through. 13(164)
- 20.** Everything is for a purpose. 15(43)
- 21.** Making the learning relevant. 16(29)
- 22.** To know why they are there. 19(33)
- 23.** Deliver the skills as a vehicle for their learning. 16(31)
- 24.** Planning with skills. 17(48)
- 25.** Developing skills in a really interesting and stimulating environment.
18(23)
- 26.** Solving problems and challenges. 19(31)
- 27.** Skills to communicate. 20 (114)
- 28.** Hopefully exciting 15(44)

Appendix I (ii): Interview 15 School B Teacher 1

Units of meaning

Aims of the Foundation Phase?

Learning through experiencing it and doing.41

Children have their own discoveries.41

Ownership of what they are doing.42

Doing to for themselves.42

Everything is for a purpose.43

Hopefully exciting.44

Freedom to cover the skills in whichever way you like.46

Freedom to go with the children's interest. 48

What do you expect from reception class in terms of Physical development?

Hold a pencil correctly. 75

Work on normal size paper.75

A lot of our gross motor work is done outside.78

Climbing, jumping. 78

Be able to sit on a chair. 86

Scissor skills.88

Able to dress themselves.90

Put on coats.92

They put on wet weather gear continually.92

The climbing frame is just play time or small group.97

Grass area is free flowing during planning.97

In the builders yard they make lots of things like bridges and stepping stones in child initiated time.98

In garden have free digging area and love to dig.99
They are outside unless very windy and torrential.101
We go to Scolton manor for forest school.104
Starting to use the race course for an outdoor area.105

What do you understand by a play based curriculum?

Not really free playing, adults are directing it and helping if pupils need skills developing. 110

What will pupils be able to do leaving you?

Be confident and independent. 116
Able to make choices.116
Have the skills to carry out independently. Have a go at things. 117
Independent learners. 118

Are children more active in the FPH?

Children more active in the FPH. 123
More children busy than sitting at tables. 123
If weather fine 80% plan (choose) to be outside.124
Far more active than being inside. 125
Don't often find them sitting down. 126.

Impact on motivation?

Children are far more engaged. 130
Children go back and re make or re do work to take home to show parents. 131

Appendix J (i): Writing Sample School A, Participant 2

Last Sunday

a mysterious

old man arrived

at Exmouth.

and made some

soup. The man

asked for

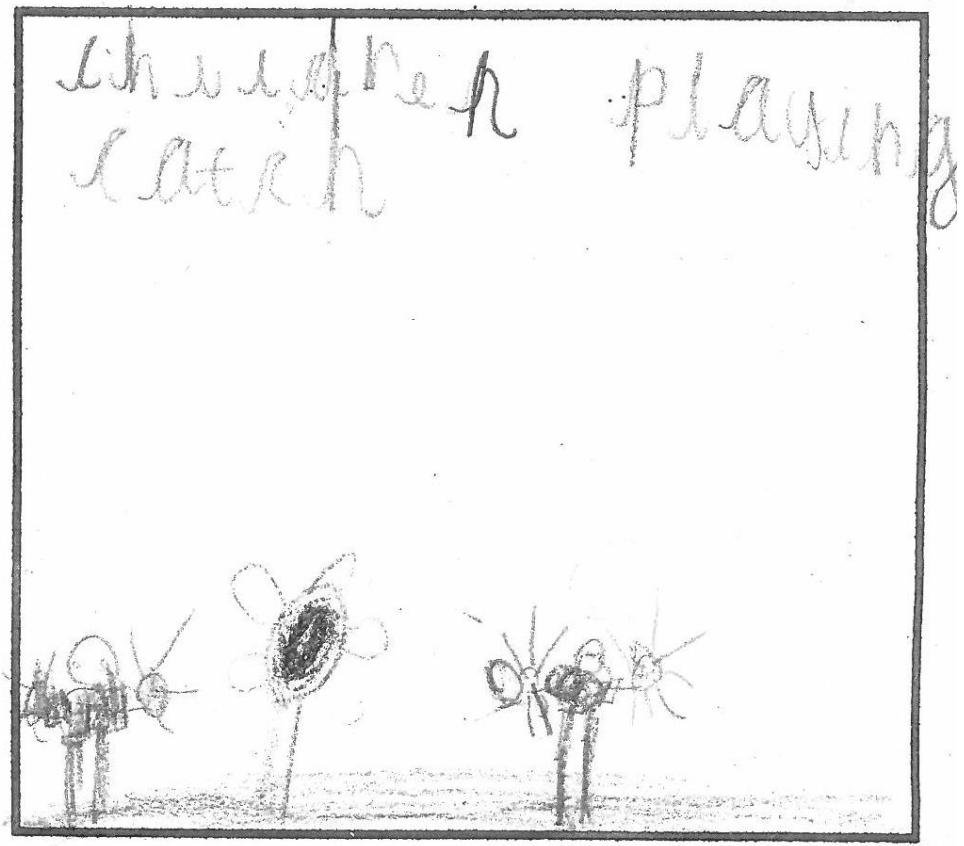
vegetables for

Appendix J (ii): Writing Sample, School A

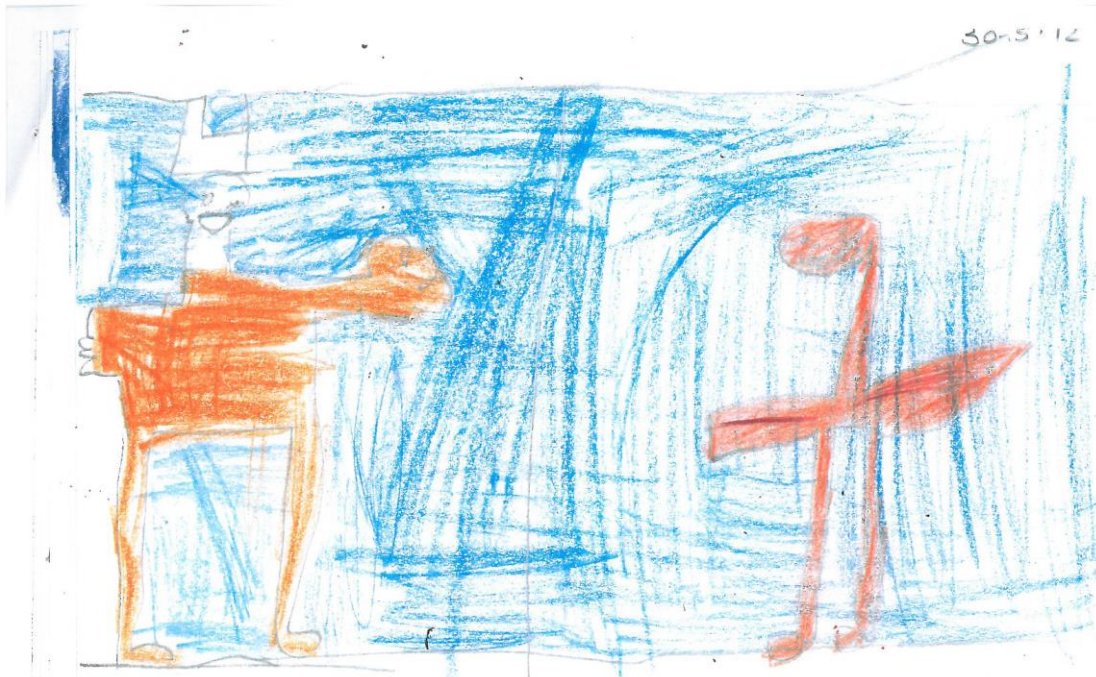
staying a lot

make³⁵ a boy

said³⁶ it was killing³⁷



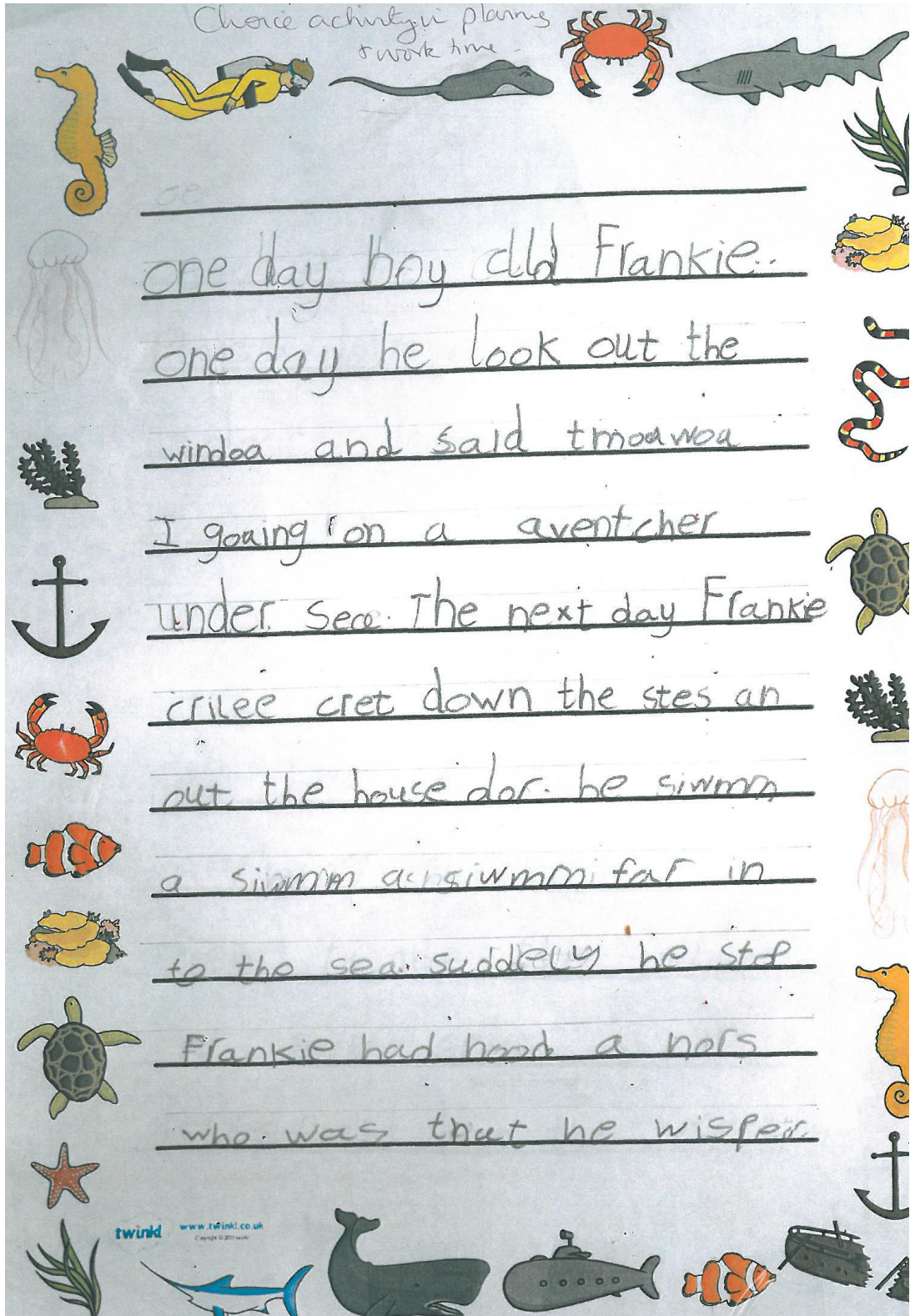
Appendix K (i): Writing Sample, School B, Participant 1



Once upon a time there was a
charming prince who lived in a castle. His
name was called Henry. That morning he
looked out of his window and said
tomorrow I'm going on a ^{adventure} into
the deep dark ^{wood} woods. The next
morning he ^{quietly} crept down the
stairs and out the castle door. He
^{walked} walked in the woods and he walked in
the deep dark woods. ^{suddenly} suddenly he saw
Henry had heard a noise who was there.

Appendix K (ii): Writing Sample, School B, Participant 2

Choice activity in plans
to work time



one day boy called Frankie.
one day he look out the
window and said tomorrow
I going on a adventcher
under sea. The next day Frankie
cried cret down the stes an
out the house dor. he swimm
a swimm a swimm far in
to the sea. suddely he stop
Frankie had heard a nois
who was that he wisper

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Appendix K (iii): Writing Sample, School B, Participant 3

he whispered Henry look~~it~~ over his shacc^{shaky}
shower and ne. sof a big red dragon.
please don't eat me I don't want to
let you I'm a vegetorecun henry and
the dragon bith love'd game's so they
dsidid to play hid and see^{hide} until it
was time frof henry to go home. Henry
shuggled in to bed and dremd about the
frendly dragon and what a avenger
the the price had.



5.1

- Writing level has moved beyond a simple statement.
- composed in sentences and use punctuation to demarcate these.

Appendix K (iv): Writing Sample, School B, Participant 4



Many many years a ago ^{ago} St David
 was a very kind man. And he
 lived with his friends. And they ^{by}
 a monastree ^{and} gether. and they ^{could}
 wor ship in the monastree. ^{manastree} And the
 lived in there. And St David ^{set} a
 man ^{called} Baio and he was a very mean
 man. And Baio ^{would} kill St David.
 but god ^{would} ^{not} let ^{him} ^{do}

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