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Using Realistic Evaluation to evaluate 'Forest School' with Young People aged 14-16 with Special Educational Needs.

by

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Abstract

This study aims to evaluate a Scandinavian approach to outdoor learning, which is used in the UK. The approach, known as 'Forest School' involves children and young people spending regular time in natural woodland working on practical projects. Forest School promotes a child-led ethos, so children are encouraged to choose their own activities (Forest School Association, 2013).

A Realist Synthesis (Pawson, 2006) was undertaken to develop an understanding of how Forest School works, according to existing research. Features of the context, change mechanisms and outcomes were abstracted to form a set of hypotheses. In line with a Realistic Evaluation (Pawson and Tilley, 1997), these hypotheses were tested through a case study of Forest School involving 14-16 year old pupils with special educational needs (SEN). Drawing on interview, observation, questionnaire and documentary evidence, the initial programme specification was refined through thematic analysis (Braun and Clarke, 2006) to create programme specification 2. Participants checked this in a Realist Interview (Pawson and Tilley, 1997) and a final programme specification was produced.

The final programme specification presents findings through context + mechanism = outcome configurations. The study extends existing research by finding that Forest School can support confidence, social skills, language and communication, motivation and concentration, physical skills, knowledge and understanding of the world and emotional well-being and behaviour in young people aged 14-16 with SEN. The study further indicates that Forest School works differently for different pupils, depending on their individual characteristics. Strategies for best practice were illuminated which may be useful to other Forest School practitioners, such as a high level of adult practical skills. The evaluation has implications for professionals working with young people as it highlights how Forest School can promote positive outcomes for some young people aged 14-16 with SEN.

Acknowledgements

*Names changed to protect participant identity.

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Glossary

CMOC – Context + Mechanism = Outcome Configuration

DAEP – Doctorate of Applied Educational Psychology

DfE - Department for Education

DfEE - Department for Education and Employment

DfES - Department for Education and Skills

EBP – Evidence-based practice

EP – Educational Psychologist

EPS – Educational Psychology Service

FS - Forest School

FSA - Forest School Association

FSL - Forest School Leader

KS1 – Key Stage 1

KS2 – Key Stage 2

KS3 – Key Stage 3

KS4 – Key Stage 4

LA – Local Authority

NOCN - National Open College Network

OECD - Organisation for Economic Co-operation and Development

OFSTED - Office for Standards in Education

PEP – Principal Educational Psychologist

RE - Realistic Evaluation

RI – Realist Interview

RS - Realist Synthesis

SEN - Special Educational Needs

SEP – Senior Educational Psychologist

SLT - Senior Leadership Team

TA – Teaching Assistant

TEP – Trainee Educational Psychologist

UK – United Kingdom

WoE – Weight of Evidence (Gough, 2007)

Chapter 1. Introduction

This thesis presents research undertaken during the second and third year of a Doctorate of Applied Educational Psychology (DAEP) at the University of Nottingham, while working in a West Midlands Local Authority (LA) as a Trainee Educational Psychologist (TEP). The crux of the current study is to evaluate a Scandinavian approach to outdoor learning, known in the United Kingdom (UK) as 'Forest School'.

A scientific realist perspective is taken and Realist Synthesis (Pawson, 2006) is used as a method of reviewing the extant relevant literature to extract the existing understanding of how Forest School may work. The available literature is based predominantly on research with pre-school and primary age pupils, so a Realistic Evaluation (Pawson and Tilley, 1997) investigates the extent to which these findings apply to a small group of 14-16 year old pupils who attend a special school within a West Midlands LA.

1.1 Researcher Identity & Background to the Study

On reflection, an interest in the potential of outdoor experiences to impact upon child development stemmed from a variety of personal and professional experiences. Childhood memories of playing happily alongside peers in natural environments may have played a role in triggering this professional interest, particularly as awareness grew of the potential threats to children's experiences of outdoor play, such as the use of computer games, loss of green spaces and parental restrictions due to safety concerns (Edgington, 2002; Louv, 2005; Gill, 2011).

An interest in working with children who have special educational needs (SEN) also developed, particularly how creative and flexible adaptations to the environment and/or curriculum may support engagement and inclusion (Lloyd, 2007). Experience of working as a teaching assistant (TA) in a special school meant I supported a range of alternative curriculum programmes for pupils aged 7-16 with emotional and learning needs. These programmes often utilised outdoor environments which seemed to facilitate positive relationship building between staff and pupils, something I hypothesised to be important when working to engage vulnerable pupils.

Later, as a mainstream Key Stage 1 (KS1) teacher, I was offered the opportunity to train as a 'Forest School Leader' (FSL). This training enabled me to deliver weekly Forest School for pupils aged 5-11, which continued for three years. Pupils and staff generally enjoyed attending Forest School and there were opportunities for curriculum links and to notice pupils' strengths, which may not have been so apparent in an environment placing greater value on academic achievement. However, this understanding did not develop beyond anecdotal experiences and ceased after enrolling on the DAEP.

As part of my current role as a TEP I provide psychological services to ten schools including primary schools, a secondary academy and a secondary special school. The secondary special school (referred to as 'Oak School' to protect participant anonymity) invests in alternative curriculums to provide bespoke educational packages for its pupils. One of the alternative curriculums on offer is Forest School, which has been provided for the past five academic years for some of Oak School's Year 10 and 11 pupils. Due to prior experience of Forest School with mainstream primary pupils, I was instantly intrigued to learn more about the pupils who go to Forest School, their experience of the programme and whether or not it improves pupil outcomes. I was also particularly interested in the potential of Forest School to promote inclusion and maximise engagement and learning for young people with SEN, which is a priority for work as a TEP.

Aside from personal interests and values as a TEP, I was eager to contribute to the knowledge base of the Educational Psychology Service (EPS) who currently supervise my training. Forest School occurs across this LA in a myriad of ways, i.e. either on or off school grounds, with leaders who may or may not be school teachers and with heterogeneous groups of children. A research proposal was presented to the Principal Educational Psychologist (PEP) and a panel of Senior Educational Psychologists (SEPs) who agreed the proposal whilst highlighting key areas for further consideration, such as the use of photographs to illustrate contextual features of the programme (where pupil and parent informed consent is gained). Interestingly, the PEP and SEPs all knew of several schools in the LA using Forest School, and felt that evaluation was required due to a limited evidence base, despite a high investment in the programme. Developing evidence-based practice (EBP) is a key function of a

scientist-practitioner such as an Educational Psychologist (EP) (Hoyos, 2012), therefore undertaking an evaluative study of Forest School was thought likely to support the development of the researcher's skills as an EP, as well as contributing to the LA and Forest School evidence base.

1.2 Rationale and Aims of this Evaluation

The role of an EP often involves supporting children indirectly through the adults working with them (Conoley and Conoley, 1990). This has unavoidably influenced this evaluation, which subsequently aims to gain information about *how* a Forest School programme works, so that practitioners can make use of this information. Research which focuses solely on the outcomes of Forest School for a small group of participants will not be generalisable or particularly useful to other settings because of failing to gain detail about *how* the programme may have caused any outcomes. Therefore, an approach able to capture this information was sought.

As a researcher I consider that there is value in understanding causality through a rigorous methodology whilst simultaneously considering and accounting for the impact of contextual factors which are embedded within real world contexts (Robson, 2011), and which will inevitably be encountered in an applied psychology career. Therefore, an epistemology of scientific realism (Pawson and Tilley, 1997) appears the best fit to my own values as a researcher and applied psychologist. Using a Realistic Evaluation framework (Pawson and Tilley, 1997) within this epistemology to support the understanding of *"what works for whom in which circumstances"* (Pawson and Tilley, 1997, p.86) will therefore meet the aims of this evaluation.

1.3 Overview of the Thesis

Chapter 2 gives a brief historical account of the education system in the UK including *how* and, to some extent, possible reasons *why* outdoor education and specifically 'Forest School' has become embedded in some parts of this system. A comprehensive and critical account of the existing available research and theory underpinning Forest School in the UK is presented and factors in this literature relating to the context, mechanisms and outcomes are extracted to form an initial programme specification (Pawson, 2006).

Chapter 3 describes and justifies the epistemology and methodology used in this study before Chapter 4 presents the findings and gives key data extracts which illustrate how evidence has been used to refine the initial programme specification developed in the Realist Synthesis. Chapter 5 provides a discussion of the findings, methodological limitations, areas for further research and implications of the findings for professionals working with children and young people. Finally, Chapter 6 offers concluding reflections on the research journey.

Chapter 2. Forest School: A Realist Synthesis

2.1 Introduction

Through working as a Trainee Educational Psychologist (TEP) in a West Midlands Local Authority (LA) I have provided psychological services to 'Oak School' (name changed to protect participant anonymity). Oak School is a special school which provides alternative provisions for young people who have Special Educational Needs (SEN). One alternative curriculum on offer for Key Stage 4 (KS4) pupils at Oak School is a form of outdoor education promoting a child-led approach, known in the UK as 'Forest School' (Forest School Association (FSA), 2013). This study aims to evaluate the Forest School programme commissioned by Oak School, starting with a review of the literature and existing Forest School evidence base.

2.2 Structure of the Realist Synthesis Literature Review

The literature review is structured in two key parts. Firstly, a brief historical and theoretical account of child vs. adult-directed education in the UK is offered and it is suggested that outdoor environments can facilitate experiential learning. Outdoor education is briefly explored, including theoretical underpinnings and what is learned from research into outdoor learning with children in the UK. A Scandinavian approach of regular child-led outdoor learning is discussed, leading into the Realist Synthesis. The second part of the literature review defines the Danish programme of child-led outdoor learning, known in the UK as 'Forest School', and sets it apart from other forms of outdoor education. Research into the impact of Forest School on children and young people in a variety of UK contexts is presented, summarised and critiqued and then information from this research is drawn out to form a 'programme specification', a process unique to Realist Synthesis (RS). RS is an increasing popular alternative to a systematic literature review (Rycroft-Malone, McCormack, Hutchinson, Decorby, Bucknall, Kent, Schultz, Snelgrove-Clarke, Stetler, Titler, Wallin and Wilson, 2012) and the application of RS to the Forest School research is described and justified below.

2.3 A Realist Synthesis (RS) of Forest School Research

The extant research into Forest School was sourced by searching databases for papers containing relevant terms (outlined in search strategy below). As would occur in a typical literature review, relevant papers are described and critiqued to give a current

account of the impact of Forest School on child development. However, within a RS, theories are also generated from the existing literature by deconstructing current research findings to develop a detailed understanding of the programme by considering:

- What is it about the programme which might produce change?
- Which individuals, subgroups and locations might benefit most readily from the programme?
- Which social and cultural resources are necessary to sustain the changes?

(Pawson and Tilley, 1997, p. 85)

Therefore, information within the existing Forest School research will be extracted to develop a 'programme specification', which provides a set of hypotheses which begins to address the points above and attempts to explain in detail how Forest School works (Pawson, 2006). A programme specification presents the *outcomes* of a programme alongside how features of the programme *context* set up *mechanisms* of change (Pawson and Tilley, 1997). Table 2.1 presents how contextual features set up conditions for mechanisms to produce an outcome, using igniting gunpowder as an example.

Table 2.1 Illustration of a Context + Mechanism = Outcome Configuration (C+M=O) (adapted from Pawson and Tilley, 1997)

Context +	Mechanism =	Outcome
Gunpowder is dry, compacted and sufficient in amount. Oxygen is present. Heat is applied.	Chemical reaction occurs	Explosion

Pawson and Tilley (1997) propose that the formula (C+M=O) can provide a framework for evaluating social programmes, which attempt to understand the multitude of aspects influencing how a programme works. Rather than only focusing on the outcomes of social programmes, RS is also concerned with establishing *"why a program works, for whom and in what circumstances"* (Pawson and Tilley, 1997, p. xvi). However, existing research, which has approached Forest School with a different theoretical framework, will vary in the amount of information it presents relating to contexts, mechanisms and outcomes:

"some studies will be relatively revealing about underlying mechanisms, some will concentrate on outcomes, others may describe context in depth. The review is concerned with juxtaposing the evidence as, for instance, when one study provides the process data to make sense of the outcome pattern noted in another"

(Pawson, 2006, p. 74)

Therefore, the programme specification developed from reviewing the existing Forest School literature will reflect elements of the context, mechanisms and outcomes, drawn from a variety of sources. RS is an alternative to a traditional systematic review, but comparable in terms of robustness (Pawson, 2006) and a bedfellow to the method of evaluation used in this study, 'Realistic Evaluation' (RE) (Pawson and Tilley, 1997). The RS will provide information to inform the RE research questions, by highlighting gaps in existing research, for example in terms of the methodologies or participant groups used. A more detailed description and justification of the epistemology and methodology chosen for this research is provided in chapter 3.

2.3.1 Search Strategy

The following databases were searched to offer a comprehensive account of the research into Forest School:

- Medline
- PsychInfo
- Science Direct
- Web of Science
- Embase
- Google Scholar
- Google

The terms used as keywords in this search were:

- "Forest School"
- "Forest Education"
- "Woodland School"
- "Woodland Education"
- "Danish School"
- "Danish Education"
- "Outdoor Education"
- "Outdoor Learning"
- "Skovbornehave" (Danish Forest Kindergartens)
- "Udeskole" (Danish Outdoor Education)

Details of the relevant Forest School research papers found (n=20), including a brief summary are presented in appendix 8.1. The Danish terms used in the literature review search strategy ('Skovbornehave' and 'Udeskole') unfortunately revealed studies which

were only published in Scandinavian languages and inaccessible for accurate review (e.g. Bentsen, Mygind and Barfoed Randrup, 2008; Droscher-Nielson, 2006).

2.3.2 Method of Review

All accessible and relevant Forest School literature will be used to shape the initial program specification as part of the RS (Pawson, Greenhalgh, Harvey and Walshe, 2004), but evidence which is deemed more methodologically sound will be drawn more heavily upon. Therefore, it is important that all research studies are examined critically and Gough's (2007) Weight of Evidence (WoE) framework provides a helpful tool for supporting the process of *"appraising the contribution that each one makes to the developing synthesis"* (Pawson, 2006, p. 87). Gough (2007) suggests there are three review criteria (A,B,C) which lead to an overall assessment (D) of the quality and appropriateness of a research paper. Table 2.2 outlines Gough's (2007) framework, which supports the review process.

Table 2.2 Gough (2007) Weight of Evidence Framework

Weight of Evidence Criteria	Implications for current review
A – quality of research to draw conclusions	Research which has been peer-reviewed and published is likely to offer more robust evidence to shape C+M=O development. Research which takes steps to reduce potential bias and increase the trustworthiness of findings is deemed higher quality.
B – appropriateness of the evidence and relevance to participants in current study	Research conducted within the past 10 years is likely to be more relevant to the RE due to reflecting a more current use of Forest School in the UK. UK research into Forest School with young people within the age ranges of 12-16 years old and who have SEN is highly relevant to this research due to similarities with pupil participants.
C – relevance to research question	In order to provide evidence for the development of a programme specification, the literature must attempt to explain *how* the programme works, with reference to context and mechanisms, as well as outcomes (Pawson and Tilley, 1997).

Gough's (2007) WoE framework (Table 2.2) was used to support the RS through drawing more heavily upon high quality research which is relevant to the case study participant group. However, as Forest School is not well represented in published literature (Swarbrick, Eastwood and Tutton, 2004), information from less rigorous studies was also included in order to provide sufficient information to develop an initial programme theory. Despite this potential threat to validity, the RE methodology (Pawson and Tilley, 1997) encourages testing and refining of theories as an iterative process. Therefore, if the programme specification from the RS draws upon findings of poor quality research which prove unsupported by the data collected in the RE, then these initial C+M=O configurations can be discarded as part of the refinement process, and will not pose a further threat to validity (Pawson and Tilley, 1997).

This section has intended to provide essential information explaining how the existing Forest School research has been reviewed in this RS. The following section now returns to the starting point of the literature review, which aims to present a brief historical discussion of child-led vs. adult led education, with a focus on child-led outdoor learning. Forest School will then be introduced as a form of child-led outdoor learning and research focusing on the impact of Forest School in the UK will be presented and used to develop an initial programme specification (Pawson, 2006).

2.4 Child-led versus Adult-directed Learning in the UK

Since the UK government passed the Education Act (1870) making education of children aged 5-13 compulsory, there has been debate about the best way to educate children and young people (Gillard, 2011). This debate revolves primarily around what should be learnt and the extent to which education should be delivered within a teacher centered or learner-centered paradigm (McManus, 2001). Early compulsory UK education typically concentrated on the 'three Rs': reading, writing and arithmetic (Gillard, 2009). In contrast, the Hadow Reports (Hadow, 1926; 1931) recommended that teachers provide experience and activity within education, and these recommendations were written into legislation within the Education Act (1944). However, this legislation also introduced competitive testing for places in Secondary Grammar schools via the administration of the 11+examination (Tomlinson, 2005), and therefore teachers continued to focus on adult-directed teaching of core subjects to support success in the exam (Galton, Simon and Croll, 1980).

The 1960s saw a period of more child-led education, supported by the Plowden Report (Central Advisory Council for Education (CACE), 1967), which had similarities to the Hadow Reports (Hadow, 1926; 1931). This experiential approach is thought to facilitate learning because knowledge develops from abstract to concrete concepts, due to the continual testing of knowledge through experiences (Kolb, 1984). Lewin (1943) proposed that behaviour is a function of a person in their environment and feedback is gained through experience, which enables individuals to evaluate the consequences of their actions. Dewey (1897) posited that experiential learning supports maturation due to its ability to transform impulses into considered actions and Piaget (1976) also acknowledged that a child is active in its environment (Piaget, 1976).

Despite the support from aforementioned psychologists and educationalists, the experiential approach of the 1960s was short-lived, possibly due to the lack of practitioner understanding of 'high quality' child-led education (Cree and McCree, 2012). By the late 1960s the UK government proposed that a higher standard of education required more formal teaching methods, and this became embedded in legislation in the 1980s (Education Act, 1986, no.2). Classroom-based and adult directed education prevailed, particularly when the Education Reform Act (1988) set out the first centrally controlled UK curriculum. A revision of the National Curriculum (Department for Education and Employment (DfEE), 1999) meant some of the content was reduced but the curriculum remained prescriptive and allowed UK teachers little freedom (DfEE, 1999). This was in contrast to other countries, such as Denmark and Finland, which have better educational outcomes than the UK (Office for Standards in Education (OFSTED), 2003).

In the current UK education system the benefits of experiential learning are recognised for children under 5 (DfE, 2012). However, when children in the UK become statutory school age teaching becomes more formal and adult-directed, possibly due to the pressures on teachers for academic results (Shields, 2010). This occurs despite recent primary curriculum reviews (The Cambridge Primary Review, 2011; Rose, 2009) advocating the use of experiential learning for children throughout their primary years.

The current government's new National Curriculum (DfE, 2013) for school-aged children, due to be implemented from September 2014, has been developed by drawing on education systems in top-performing countries (DfE, 2011). One of these named top-performing countries is Finland (DfE, 2011), where the curriculum includes regular experiential learning opportunities (OFSTED, 2003). Although this level of experiential learning is not an explicit requirement of the new UK curriculum (DfE, 2013), it proposes that, *"There is time and space in the school day and in each week, term and year to range beyond the national curriculum specifications"* (DfE, 2013, 3.2). This suggests that UK teachers should have time to deliver activities outside the statutory curriculum and could therefore include experiential activities within the timetable.

In summary, formal classroom-based and adult-led education has historically been presented as the answer to comparatively low UK educational standards, but has not provided the desired results (Gillard, 2009). Therefore, it is argued that some experiential learning should be considered for statutory-age children in the UK within the new curriculum (DfE, 2013). The following section explores the use of outdoor environments to facilitate this experiential approach, as part of a *"balanced curriculum diet"* (Gill, 2011, p.20) for children in the UK.

2.5 Children's Experiences of Outdoor Learning in Education

The potential of outdoor environments to facilitate learning is not a new concept, illustrated for example in Rousseau's (1762) early writings about effective education. Outdoor environments have been central to the learning environments in early Kindergartens (Froebel, 1912), nurseries (McMillian, 1919; Montessori, 1967) and Steiner schools (Steiner, 1947). Despite the efforts of these early educationalists, many present-day writers have expressed concern about children's lack of opportunity for play in the outdoors (Rickinson, Dillon, Teamey, Morris, Choi, Sanders and Benefield, 2004; Louv, 2005; Waters and Begley, 2007), and the poor practice or missed opportunities when outdoor activities are on offer (Bilton, 2010; Maynard and Waters, 2007).

The decline in frequency of children's outdoor play is likely to be due to a variety of social changes (Gill, 2011) such as the popularity of computer games (Public Health England (PHE), 2013) and parental concerns about abduction, which are often fuelled

by the media (Edgington, 2002). Concern about the lack of opportunities for children to engage in experiential learning may have led to support for this within the previous Government's 'Learning Outside the Classroom Manifesto' (LOtCM) (Department for Education and Skills (DfES), 2006). Although the LOtCM was not a statutory document, its publication by the government at the time suggested some commitment to more learning outside the classroom (DfES, 2006), which was also encouraged by OFSTED (2008).

The LOtCM defines 'outdoor learning' as "*the use of places other than the classroom for teaching and learning*" (DfES, 2006, p.1). This definition does not therefore propose that 'outdoor learning' has to be actually outside. This lack of clarity may mean that outdoor learning is construed differently by different professionals, ranging from teachers implementing lessons away from the usual classroom, to outdoor adventure activities such as 'Go Ape' (Go Ape, 2014). Both of these examples are likely to provide at least some experiential learning, but the frequency of lessons outside depends on the particular teacher and outdoor adventure programmes tend to be one-off or short term (Knight, 2009; Donnelly, 2013). The lack of clarity in the LOtCM (DfES, 2006) when defining 'outdoor learning' and the fact that it does not feature explicitly in the new curriculum (DfE, 2013) suggests that outdoor learning is not currently well defined, despite governmental claims of drawing on educational systems in top performing countries which use a regular experiential outdoor approach (DfE, 2011; OFSTED, 2003; Bentsen et al, 2009).

2.6 Theory and Research Underpinning Outdoor Learning

The thinking of the aforementioned educationalists (Rousseau, 1762; Froebel, 1912; Steiner, 1947) supports the 'Biophilia hypothesis' (Kellert and Wilson, 1993), which suggests that people have an innate affinity to be part of the natural world, and that destruction of the environment and other factors which reduce the relationship between humans and nature may have detrimental consequences for quality of life (Kellert and Wilson, 1993). Public Health England (PHE, 2013) found a significant negative association between time spent accessing computer games and wellbeing, suggesting that more time spent on activities away from technology is beneficial. This may be particularly pertinent in a time when there are concerns about the mental health of

children and young people, as research suggested that 10% of 5-15 year olds in the UK have a 'mental disorder' (Meltzer, Gatwood, Goodman and Ford, 2000).

The reported positive effect of being in environments away from technology may be explained to some extent by 'Attention Restorative Theory' (Kaplan, 1995), which suggests that urban environments can cause attention to fatigue, but this can be restored when attention is not effortful. Non-effortful attention occurs when individuals are intrinsically fascinated and opportunities for this are particularly suited to a natural environment (Herzog, Black, Fountaine and Knotts, 1997). Restorative effects are defined as 'tending to restore strength or health' (Oxford English Dictionary, 2013) and exposure to a natural environment can provide greater restorative effects than exposure to urban environments or relaxation techniques (Hartig, Mang and Evans, 1991). Faber Taylor and Kuo (2009) also found that young people with Attention Deficit Hyperactivity Disorder (ADHD) showed significantly enhanced levels of concentration after exposure to nature in comparison to other environments, further supporting the use of natural environments to restore attention.

Natural environments may have cognitive as well as restorative benefits, as Gardner's (1999) theory of multiple intelligence includes naturalistic intelligence and suggests that children need opportunities to learn about the outdoors and can succeed in this aspect of learning, even if they are less able in other areas of intelligence. Outdoor learning provides opportunities for children to socialise with peers and adults (Rickinson et al, 2004) which, according to Vygotsky (1978), is key to cognitive development, *"every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level"* (Vygotsky, 1978, p. 58).

Vygotsky's (1978) theory of social learning suggests that a child learns within their zone of proximal development (ZPD) and that more knowledgeable others mediate this learning through offering support when required. This suggests that learning is supported by social interaction, which occurs frequently during free play (Moyles, 2010) and which can be facilitated by a natural outdoor environment (O'Brien and Murray, 2005). Therefore, children are likely to benefit from access to natural environments in groups to support their emotional (Kaplan, 1995), social (Moyles,

2010) and cognitive development (Gardner, 1999; Vygotsky, 1978) and also to fulfill their innate need for a relationship with the outdoors (Kellert and Wilson, 1993).

In a review of 150 studies examining fieldwork visits, outdoor adventure and outdoor school or community projects, Rickinson et al (2004) found that outdoor education promotes increased knowledge and skills, social development, enhanced confidence, improved health and physical development and a positive change in attitude. The National Wildlife Federation (2010) also found that outdoor learning supported positive behaviour and young people's motivation to learn. This supports Reed (2005) who found that outdoor activities improved pupil's behaviour and helped to reduce rates of pupil exclusions from school, which has increased in the UK (Gordon, 2001). However, it must be acknowledged that this research (Rickinson et al, 2004; The National Wildlife Federation, 2010) received funding from organisations with potentially vested interest in publishing positive findings, so these conclusions should be treated cautiously.

As aforementioned, 'outdoor learning' appears to represent a variety of activities from lessons in a different location from the classroom to outdoor adventure (e.g. Go Ape, 2014). Clearly, not all outdoor learning opportunities use natural environments or promote child-led learning, and according to Bilton (2010) these may not therefore be considered 'high quality' outdoor experiences (Bilton, 2010). Bilton (2010) and Cree (2009) describe high quality outdoor learning as involving children and staff talking as equals with the child only seeking adult help when required to meet their purposes. However, these views appear to be based on opinion and anecdotal evidence rather than research. Although practitioner views could be considered high value due to their position to know the children involved and note changes, anecdotal case studies are considered less reliable than research which takes steps to reduce threats to validity (Aslam, Georgiev, Mehta and Kumar, 2012).

The following section turns the focus to Scandinavia, where the quality of life and educational outcomes are better than the UK (OFSTED, 2003; Organisation for Economic Co-operation and Development (OECD), 2013) and where regular, child-led outdoor education is embedded within the curriculum for young people, often throughout their educational career.

2.7 Outdoor Learning in Scandinavia

In Scandinavia there is a cultural commitment for children to experience regular (often daily) child-led opportunities to learn in the outdoors, throughout their time in education (OFSTED, 2003; Williams-Siegfredsen, 2012; Bentsen, Mygind and Randrup, 2009; Bentsen et al, 2010). Many young children in Denmark experience regular use of the outdoors in all weathers when they attend 'Skovbornehave' (Forest Kindergarten) (Williams-Siegfredsen, 2012). There has also been a push for Danish young people aged 7-16 to experience a day a week or fortnight on curriculum-related tasks in natural environments (Bentsen et al, 2009). In Denmark, this experience is known as 'Udeskole' (Outdoor Education). A national survey of (n=2,082) Danish schools found that 28% practice 'Udeskole' with a further 15% planning to introduce a compulsory weekly outdoor experience within the next three years (Bentsen et al, 2009). In a review of the Scandinavian literature on 'Udeskole' published in English, Bentsen et al (2010) cites findings which include increased physical activity, more explorative language and increased positive social interactions. However, the studies are only briefly summarised and rely heavily on case study reports.

In Denmark there is a social pedagogy or 'way of life' know as 'friluftsliv', translating to 'fresh air life' (Williams-Siegfredsen, 2012). The effects of 'friluftsliv' may be reflected in an overall review of population well-being as, according to the OECD (2013) Denmark is 7th on the 'Better Life Index', for education, ahead of the UK (15th). The following seven pedagogical principles of educational practice in Denmark are supported by the use of outdoor environments (Williams-Siegfredsen, 2012).

1. A holistic approach to children's learning and development
2. Each child is unique and competent
3. Children are active and interactive learners
4. Children need real-life, first-hand experiences
5. Children thrive in child-centered environments
6. Children need time to experiment and develop independent thinking
7. Learning comes from social interactions

(Williams-Siegfredsen, 2012, p. 9)

These seven principles reflect the ideology of influential thinkers such as Rousseau (1762), Vygotsky (1978) and Froebel (1912) and mirrors some of the messages within the LOtCM (DfES, 2006), with the emphasis on real-life experiences. In order to learn more from Danish practice, a group of staff from Bridgewater College, Somerset, visited a Danish 'Skovbornehave' in 1995 and subsequently the idea of regular sessions in a woodland for young children was introduced to the UK (Bridgewater College, 2013; O'Brien and Murray, 2006). The term 'Forest School' is used henceforth to describe this approach (Williams – Siegfredsen, 2012; FSA, 2013).

2.8 Definition and History of Forest School in the UK

Since the Bridgewater College visit to a Danish 'Skovbornehave' (Bridgewater College, 2013) there has been growing interest in Forest School in the UK (O'Brien and Murray, 2007) potentially linked to the increasing concern over limitations in children's outdoor play (Louv, 2005; Maynard, 2007a). Forest School sites are developing across the UK (Gill, 2011); in 2006 it was reported that there were approximately 140 Forest Schools in the UK (O'Brien and Murray, 2006) and since then many more Forest School Leaders (FSLs) have been trained (Ritchie, 2010). Early years and primary aged children in the UK most commonly access Forest School (Knight, 2011a), however some secondary and special provisions are beginning to use the approach with their young people (Knight, 2011a; Archimedes Training, 2011a; 2011b).

Forest School is a unique method of outdoor education where children or young people spend regular time in a woodland area on self-initiated activities (FSA, 2013). According to Cree (2009) Forest School is "*fundamentally different in its pedagogy*" (p.23) to other forms of outdoor learning because adults stand back and act as a 'facilitator', not as a 'teacher'. This may be challenging for adults used to teaching to particular objectives (Maynard, 2007a) and Cree (2009, p.23) acknowledges that it takes *"great courage"* to step back and facilitate. Forest School is defined as:

"an inspirational process that offers children, young people and adults regular opportunities to achieve, and develop confidence and self-esteem through hands-on learning experiences in a woodland environment."

(O'Brien and Murray, 2005, p. 11)

In order to access these 'hands-on learning experiences' such as shelter building, fire lighting or the use of sharp tools, pupils must have engaged with some skill-based teaching. However, once shown these key skills children decide how they choose to spend their time at Forest School, as the practitioners involved recognise the benefits of play (Moyles, 2010). Indeed, there are links between the Forest School ethos and principles of play therapy, as both suggest that children need independence and self-direction to be themselves which is facilitated by a therapeutic relationship with a FSL (Axline, 1947) and having responsibility for their own development (Landreth, 2002).

There is a specific set of criteria which need to be met before outdoor learning can be considered a Forest School (FS), outlined as follows by the FSA (2013):

- FS is a long-term process of regular sessions, rather than a one-off or infrequent visits; the cycle of planning, observation, adaptation and review links each session.
- FS takes place in a woodland or natural environment to support the development of a relationship between the learner and the natural world.
- FS uses a range of learner-centered processes to create a community for being, development and learning.
- FS aims to promote the holistic development of all those involved, fostering resilient, confident, independent and creative learners.
- FS offers learners the opportunity to take supported risks appropriate to the environment and to themselves.
- FS is run by qualified Forest School practitioners, who continuously maintain and develop their professional practice.   (FSA, 2013)

The FSA was formed in 2012 as a national governing body for Forest School and is a source of information for training, resources, news and information. Knight (2011b) - who is part of this governing body - states that:

"Forest School is on the cusp of becoming a respected and established intervention in schools for all ages of children and young people, as well as moving out into the community as a way of working with vulnerable groups".   (Knight, 2011b, p. 590)

Knight's (2011b) view suggests that more research and development is needed to take the Forest School movement away from the 'cusp' and into the realm of established and respected practice, if indeed that is where it belongs. In order to develop an evidence

base for Forest School and, in particular, outcomes for children and exactly how they are supported by Forest School, robust research activity is required. The following section aims to present the existing Forest School research and illuminate any gaps in the existing evidence base, which might be filled by the current study.

2.9 The Forest School Realist Synthesis (RS)

The previous section has aimed to present an account of the development of outdoor learning opportunities for children in the UK and some of the theory and research which may underpin this. The following account aims to focus on reviewing the research with has specifically addressed Forest School, as defined by the FSA (2013) criteria. Gough's (2007) framework was applied to each study to establish how evidence would be used to develop the initial programme specification (appendix 8.2).

With the aim of developing some order to the RS, the available literature will be presented in approximate ascending order of target participant age. This is also likely to reflect the research chronology, as Forest School in the UK was first used with early years pupils, to reflect its use in Danish 'Skovbornehave' (Knight, 2011b; Williams-Siegfredsen, 2012).

2.10 Research and Evaluations of UK Forest School with Early Years Children

Massey (2004) conducted a participatory case study to evaluate the Forest School experience for 8 children aged 3-4 years old attending an independent nursery. This small scale study observed the children at Forest School over one academic year and gained information through structured observations with video recording, interviewing children, staff, Forest School leaders and parents and pre-post programme questionnaires to parents. Massey (2004) highlighted key themes from the data to illustrate the perceived changes in the children's levels of skill and development.

Findings suggest that children appeared to develop positive relationships with peers and adults, were observed working more as a group and considering the needs of others. Forest School provided opportunities for children to develop social interaction skills, such as asking others for help when moving heavy objects (Massey, 2004). Massey (2004) noted that, over time, children's questions became more specific, altering from statements ("look at this") to questions ("is that like a badger?" – referring to a fox

being nocturnal). The Forest School environment seemed to provide a real context for language use and vocabulary development and children appeared to develop confidence in self-initiation and choosing. The balance of adult support and self-initiated activities led children to consider risk taking and a safe risk-taking environment was created because supportive adults didn't interfere too early, but made risks apparent to the children and provided small and achievable tasks (Massey, 2004).

Massey (2004) further indicated that children demonstrated perseverance for a sustained amount of time on projects they were motivated to complete and adults at Forest School were able to assess the children's skills and understanding in a different way. Massey (2004) also highlights some of the contextual features of Forest School, including a child-led approach, which is useful for the programme specification development. However, no detailed summary was offered about how skills in risk taking, language and social development could be transferred to other contexts, such as the nursery classroom. These findings (Massey, 2004) should be treated very cautiously as any improvements in children's skills could be due to maturation, and this small-scale study was not published or peer-reviewed.

Waters and Begley (2007) investigated the effects of Forest School on pre-school age children, through a case study considering the risk-taking behaviours of two children (both 4 years 4 months old) at Forest School, in comparison to the nursery playground. Waters and Begley (2007) gathered data through narrative observations of the two children in both contexts (Forest School and the nursery playground). The researchers spoke their observations into Dictaphones before transcribing the recordings and using thematic analysis to develop codes and themes (Braun and Clarke, 2006). The children and their classmates attended Forest School for half a day each fortnight and were observed over a 4-month period. The two participants were selected by their teacher, based on pre-existing risk-taking characteristics. Participant A was male and was considered to take risks in his play which often concerned adults due to the danger created to himself and others. Participant B, in contrast, was female and noted to rarely, if ever, take risks in her environment, preferring to focus her attention on keeping to rules and avoiding reprimand.

The results of the study suggested that more appropriate risk taking occurred at Forest School for both children (Waters and Begley, 2007). Child A received fewer reprimands at Forest School in comparison to the playground, whereas Child B took more risks at Forest School in comparison to other environments, and her excitement about the Forest School experience was also noted. It was observed that the rules of the school playground altered slightly according to which adult was supervising, which may have led to confusion for the children (Waters and Begley, 2007). However, at Forest School the adults were consistent so the rules were constant, which meant that children were more likely to understand the rules and less likely to be reprimanded (Waters and Begley, 2007). The study attempted to avoid bias by drawing on inter-rater reliability for the identification of data themes and this attempt to enhance validity is valued in terms of Gough's (2007) framework. However, the sample was extremely small and selection may have caused bias due to the requirement for pre-existing characteristics.

2.11 Research and Evaluations of UK Forest School with Primary Age Children

Davis and Waite (2005) reported the findings of research undertaken by seven undergraduate students who had acted as participant-researchers during the delivery and evaluation of Forest School in three different settings in Devon, with children from Reception and Year 1. A range of methods were used (observations, questionnaires and interviews) and the studies focused on identifying any changes to children's social skills, play, language and cognitive development. Programmes lasted 6 weeks, with the children either attending a morning or afternoon session once per week. The research provides rich information in the form of quotes and observational data, which was triangulated by gathering the views of parents (n=15), children (n=60), teachers and FSLs (numbers not specified).

Positive developments were noted in each area of functioning explored and suggestions made for future development, including drawing more upon the Forest School environment for delivering the curriculum. Despite the potential need for more opportunities to link activities on offer at Forest School to the national curriculum (DfEE, 1999), William-Siegfredsen (2012) suggests that this can occur naturally, for example children observe seasonal changes to the site and are intrigued by the evidence of the presence of animals (Williams-Siegfredsen, 2012).

In addition, Davis and Waite (2005) cannot guarantee the quality of data collection due to reliance on other people's work in seven separate studies. However, by examining evidence gathered by the undergraduates, they became aware that *"each programme varies according to the child attending, the leaders and supporting staff, the site used and the weather experienced,"* (Davis and Waite, 2005, p. 2). This suggests that multiple elements can impact upon Forest School programme development and success, offering further C+M=O data that could contribute to the initial programme specification for the present study.

A study by Lovell (2009a, 2009b) investigated the frequency of physical activity at Forest School with a single group of 26 children aged 9-11 in a Scottish primary school. The research aimed to find out whether Forest School significantly increased children's frequency of physical activity, given that low levels of physical activity can be linked to health problems (Currie et al, 2008). Using a two-phase mixed methodology design Lovell (2009a; 2009b) initially measured children's physical activity at Forest School in comparison to a normal school day using an accelerometer and then by interviewing the child participants in pairs to understand more about their experiences and perceptions of physical activity during and away from Forest School. Lovell (2009a; 2009b) found that children were significantly ($p<0.001$) more active at Forest School in comparison to normal school days, even when children had physical education (P.E). At Forest School their activity was more continuous, rather than in short bursts.

Significant differences between boys and girls were found on school days but a gender effect was not found on Forest School days, suggesting that the Forest School activities on offer appeal equally to both sexes (Lovell, 2009a; 2009b). The results of the semi-structured interviews suggested that children particularly enjoyed active games and the opportunity to be outside and get dirty. This qualitative information appears to support the 'Biophilia hypothesis' (Kellert and Wilson, 1993) as the children reported enjoying being outside. The findings may also support the notion that the opportunity to be active for a longer period of time (a day rather than a single lesson) is a key element of Forest School, particularly considering the effect physical activity may have on improving a person's mood (Byrne and Byrne, 1993).

Lovell's (2009a; 2009b) research investigated an important feature of what Forest School can offer, and used technology to gain accurate measurements, although the accelerometers sometimes failed. Lovell (2009a) provides a succinct report published by the Forestry Commission, a group potentially with a vested interest and more likely to promote positive findings. Lovell (2009b) is an unpublished Doctoral thesis and is one of few studies into Forest School which has quantitative data, albeit on a single aspect of the Forest School experience. The study is helpful for programme specification development due to attempts to use control to enhance validity (Gough, 2007) but is limited by a small sample size and has difficulties generalising results because participants were from a single school.

Vandewalle (2010) describes how Forest School was used in a single school in Hertfordshire (UK) where all children from nursery to Year 6 access the programme. The author is a teacher in the school and a trained Forest School Leader. Parents of children attending Forest School were asked to complete questionnaires and their children were interviewed. The findings indicate that parents noticed their children were enthusiastic about Forest School and talked about their experiences, whilst the children also reported several specific activities they enjoyed, including den making. Vandewalle (2010) reports how the National Curriculum (DfEE, 1999) is easily drawn into the Forest School programme, but does not elaborate on the extent to which children are directed to curriculum-related activities in this programme, which may be concerning as the criteria for a Forest School is that activities are child-led (FSA, 2013; Knight, 2009). This short report does not make this important feature of Forest School clear, and other key information such as sample size, method of analysis and limitations are also not included. Due to these restrictions, the findings of Vandewalle (2010) will be used sparingly and cautiously in the initial programme specification (Gough, 2007).

More recently, Ridgers, Knowles and Sayers (2012) adopted a case study approach to focus on the natural play of 17 children aged 6-7 years in a Forest School site of a UK primary school. Children were asked about their experiences of play through child focus groups (2-3 children in each group) before and after the children attended a Forest School programme. The results reported that, prior to Forest School, the children generally considered natural play to occur indoors and to involve freedom and choice to play what they wanted to. Post-programme data suggested that children had become

more aware of the range of opportunities for play in natural environments. At both data collection points, children demonstrated awareness of barriers to natural play, which were mainly around parental fear for their safety, such as dangerous roads, fears of abduction and injury. The weather was cited less frequently as a barrier to play post Forest School, in comparison to baseline (Ridgers, Knowles and Sayers, 2012).

Ridgers, Knowles and Sayers (2012) conclude that natural environments, such as those used during Forest School, provide diverse and challenging play that *"tests children's competencies, enables them to manage their own perceptions of risk, and helps their creativity, observation and motor skills"* (Ridgers, Knowles and Sayers, 2012, p. 60). The authors claim that the children gave evidence to suggest that they now seek to access the natural world for play. This research provides helpful outcome data for programme specification development and the authors took steps to enhance the validity of their data by using inter-rater reliability checks. However, opportunities to enhance the research by triangulating information from other sources such as parents and teachers were missed.

Murray (2003) reported the outcomes of a participatory evaluation project with Forest School leaders from Wales, which aimed to build a picture of how Forest School works. The participants met as a focus group to develop hypotheses about the outcomes of Forest School, and then tested these hypotheses in their settings. The practitioners collected case study data from children attending two primary schools (participant numbers not given) and to support transition of 34 Year 6 students from other schools. The case study data was used to test out the initial hypotheses developed in the focus group. Findings suggest that there are six key outcomes of Forest School, as follows:

1. Forest School increases children's self-esteem and self-confidence.
2. Forest School improves an individual's ability to work co-operatively and increases their awareness of others.
3. Forest School counters a lack of motivation and negative attitude towards learning.
4. Forest School encourages ownership and pride in the local environment.
5. Forest School encourages an improved understanding of the outdoors.
6. Forest School increases the skills and knowledge of the individuals who take part.

(Murray, 2003, p. 13)

Murray (2003) also posited that ten success factors were necessary for Forest School to meet the aforementioned outcomes:

1. Trained and experienced Forest School Leaders recognised and accredited by the schools who are confident to deliver sessions.
2. Encouraging adults to attend each session to ensure a low child to adult ratio
3. The same Forest School Leaders for each group or cohort throughout a series of sessions
4. Close contact and good communication between the school staff and the Forest School Leaders.
5. A prepared and established site where all the sessions are delivered
6. Good access to the Forest School
7. Link activities to the school curriculum
8. Familiar routines and structures to sessions
9. Enjoyment by the teachers and Forest School Leaders
10. Parent and carer involvement in Forest School activities

(Murray, 2003, p. 23)

This bottom-up approach resulted in the production of a self-appraisal form which practitioners could use to evaluate their practice. However, some of the participants may have had a vested interest in promoting the success of Forest School due to their employment as FSLs and therefore the results may have been positively biased. Murray (2003) constitutes 'Phase 1' of a study which was developed further and reported in 'Phase 2' by O'Brien and Murray (2005; 2006; 2007), discussed below.

O'Brien and Murray (2005; 2006; 2007) describe how the initial data gathered from FSLs in phase 1 (Murray, 2003) was tested to see whether the same findings applied elsewhere. O'Brien and Murray (2005; 2006; 2007) conducted case studies with 24 children aged 3-9 across seven schools in Oxfordshire, Shropshire and Worcestershire to understand whether the six outcomes of Forest School from phase 1 (Murray, 2003) were present in these other settings. The research was conducted over 8 months using an action research framework (Reason and Bradbury, 2011) and appreciative inquiry (Cooperrider, Whitney and Stavros, 2003).

The action research cycle consisted of three key phases as follows:

1. The production of a 'Storyboard' by stakeholders (teachers and FSLs) in order to establish a shared theory of change.

2. Data collection through practitioner observation of 24 children over 8 months in seven different Forest Schools in Oxfordshire, Worcestershire and Shropshire. This was supplemented by parent and teacher interviews.

3. The production of a 'Reflection Poster' in order to review theory development and discuss findings with stakeholders prior to reporting back to commissioners.

(from O'Brien and Murray, 2005)

From this, O'Brien and Murray (2005; 2006; 2007) identified aspects which set Forest School apart from other forms of outdoor education, particularly the use of a woodland, freedom for child-led exploration and regular contact with Forest School over time. The research offered another suggestion for best practice around the use of woodland rather than piece of land attached to the school, due to the *"greater adventure and mystery"* it provides (O'Brien and Murray, 2005, p. 74). The findings (O'Brien and Murray, 2005; 2006; 2007) concluded that eight areas relating to child development were enhanced by the Forest School experience, as illustrated in Fig. 2.1.

Figure 2.1 Outcome themes identified by O'Brien and Murray (2005; 2006; 2007).

1. Confidence	2. Social Skills	3. Language and Communication	4. Motivation and Concentration
Characterised by the self-confidence and self-belief that comes from children having the freedom and the time and space to learn, grow and demonstrate their independence.	Characterised by an increased awareness of the consequences of actions on other people (peers and adults), the acquired ability to undertake activities with others either by sharing tools and tasks, or by taking part in co-operative play.	Characterised by the development of more sophisticated uses of both written and spoken language (vocabulary and syntax) that is prompted by the visual and other sensory experiences of a child taking part in Forest School. At the same time these experiences can stimulate and inspire conversation amongst children who are otherwise reluctant to engage in meaningful dialogue with peers and adults.	Characterised by keenness to participate in exploratory, learning and play activities, as well as an ability to focus on specific tasks and to concentrate for extended periods of time. In conversation at school or at home they display a positive attitude towards Forest School in particular, and towards learning in general.
5. Physical skills	6. Knowledge and understanding	7. New Perspectives	8. Ripple Effects beyond Forest School
Characterised by the development of physical stamina and gross motor skills - the physical skills and co-ordination allowing the free and easy movement around the Forest School site, as well as the development of fine motor skills – the effective use of tools and the ability to make structures and objects (e.g. shelters, dens or creative art projects).	Characterised by a respect for the environment and an interest in their natural surroundings; making observations and insights into natural phenomena such as seasonal change and the ability to identify different species of flora and fauna. This can be reflected in improved academic attainment.	Forest School can give teachers and practitioners a new perspective and understanding of the child as they observe them in a different setting. A different relationship can develop between children and teachers as children see the teachers in a different setting, and coping with some of the same challenges as them. The Forest School setting also provides the evaluative space to identify the individual learning styles of the children.	As a result of taking an active part in Forest School teachers gain the opportunity to inform their own practice, and to adapt their approaches to outdoors learning. Due to children's enthusiasm for Forest School, they bring the experience 'home'. This can result in changes to out-of-school routines and behaviour with parents taking their children 'outdoors' more. Parental interest in and attitude towards Forest School can change over time; it gives them the chance to obtain a different attitude towards the outdoors such as their perception of risks.

(O'Brien and Murray, 2007, p. 255)

This study was commissioned by the Forestry Commission (O'Brien and Murray, 2005; 2006) but conducted by independent researchers and published after peer review (O'Brien and Murray, 2007). It used observation over time and triangulated data with stakeholder views to identify and track changes for the children involved. Although the participatory nature of the research may have compromised researcher objectivity, it could be argued that by gaining information from teachers and parents who know the children well meant that developmental baselines were known, enabling the researchers to have better insight into the effects of Forest School for individual children observed. The authors acknowledged that failing to seek the child's view creates a limitation to their study, and suggest that future research should include this.

O'Brien (2009) provides a further analysis of the data collected in O'Brien and Murray (2005; 2006; 2007) and considers in more depth *how* changes occur at Forest School for three of the themes identified: motivation and concentration, social skills and new perspectives. For example, O'Brien (2009) suggests that children relate more positively to peers and learn that more can be achieved together when presented with tasks at Forest School requiring more than one pair of hands, such as moving heavy logs. When considering the theme of 'motivation and concentration', O'Brien (2009) offers the following explanation of change:

Figure 2.2 Summary of motivation and concentration development at Forest School (O'Brien, 2009).

Forest School is a place where ...
- Subjects on the school curriculum are set in a context that is distinct from the indoor classroom environment.
- Child led and initiated learning is encouraged allowing for imaginative, and exploratory activities to take place.
- The focus is on how the whole child can benefit from their Forest School experience.

Changes that can occur include ...
- Children become eager to participate, and are inspired to explore and learn in a sometimes unfamiliar woodland environment.
- Children initiate their own learning and play activities.
- The children focus and concentrate for longer periods of time on tasks and issues that are of interest to them.

This is often manifested by ...
- Children keen to come back to Forest School.
- Children who are excited about setting off to Forest School and actively look forward to it.
- Children who talk about Forest School back in the classroom and with parents and relatives.

(O'Brien, 2009, p. 52)

The theme 'new perspectives' is also considered in this way, with a more in-depth focus on what the Forest School environment provides, what changes occur in the child's thinking and, finally, how this is manifested in their behaviour. Although based on the data collected in O'Brien and Murray (2005; 2006; 2007), the paper considers how causality is attributed to the changes observed, rather than a more simplistic focus on what the outcomes are. Although there was no justification given for why these particular three themes were selected out of a possible eight, O'Brien (2009) does offer more information about the optimum conditions for a Forest School environment, such as a focus on the whole child and encouraging child-led learning (fig. 2.2). The findings from Murray (2003) O'Brien and Murray (2005; 2006; 2007) and O'Brien (2009) are of importance to programme specification development because of the focus on *how* Forest School produces certain outcomes as well as the rigour from continuous refinement of their findings (Gough, 2007).

In order to understand more about the effects of Forest School in other settings, Borradaile (2006) undertook research in Scotland, which had two overarching aims: to consider whether the results of Forest School with children in England and Wales (Murray, 2003; Murray and O'Brien, 2005; 2006; 2007) are relevant to a Scottish population and to understand how Forest School may link with Scotland's priorities for educational development. The data consisted of field observations, interviews with key stakeholders, parental questionnaires and discussions with key practitioners within local authorities. The participants were pupils from local schools from both typically developing groups (n=50) and those with additional needs (n=6). The findings suggest that the Forest School experience provides opportunities for children to develop curriculum-related knowledge, have respect for the site and improve their behaviour (Borradaile, 2006).

Borradaile (2006) also found evidence to suggest that Forest School supports Scotland's national priorities for education, including 'Achievement and Attainment', 'Framework for Learning', 'Supporting Inclusion and Equality', 'Values and Citizenship', and 'Learning for Life'. The report presents a SWOT (strengths, weaknesses, opportunities and threats) analysis of the process of embedding Forest School as an opportunity to be available to all children in Scotland, and reveals some practical dilemmas such as how quality is assured in programme delivery and how funds are sourced to support training

and high adult to child ratios. Borradaile (2006) is in favour of enabling access for all to Forest School, and summarises *"the evidence from Forest School so far is that it can make a significant contribution to developing confidence and creative thinking, with a positive and healthy attitude to life long learning and a culture of enterprise"* (Borradaile, 2006, p. 32). Although a large sample is used including participants with additional needs which is relevant to the current study (Gough, 2007), the evidence presented is heavily anecdotal and did not seek the views of the children involved.

2.12 Research and Evaluations of UK Forest School with pupils with Special Educational Needs (SEN)

The Forest School experience is gradually being made available to other groups of children across the country, including pupils of secondary age and those with SEN (Knight, 2011a). Forest School research with this population is highly relevant to the group of participants in this case study, especially with children over 12 years old (Gough, 2007). Cullen, Fletcher-Campbell, Bowen, Osgood and Kelleher (2000) suggest that a small proportion of young people in KS4 may not be suited due to the demands required by GCSEs, and so some schools are exploring and investing in alternative curriculum packages to enable these learners to access education and achieve (Cullen et al, 2000; Knight, 2011a). Knight (2011a) sought contributions from practitioners over the country using Forest School to support adolescents with social and emotional needs, often as part of an alternative curriculum package. One contributor (Cree, 2011) suggested that once young people had developed a positive and trusting relationship with the FSL, they experience success through child-led activities and by feeling comfortable to talk about their feelings in a supportive and safe environment (Cree, 2011).

A training centre in the North of England describes the Forest School experience of 6 Year 9 pupils from a Pupil Referral Unit (PRU) who had all been excluded from mainstream school (Archimedes Training, 2011a). These pupils experienced Forest School for 3 days a week over one academic year. It was reported that the provision fulfilled National Curriculum (DfEE, 1999) demands, while also supporting social and emotional development. Five of the pupils finished the course, and there was a reported improvement in behaviour at home and at the PRU according to the adults involved, suggesting that the effects of the programme may be transferrable. Adults involved in

the project also commented that the pupils experienced opportunities to share their success and develop new skills and confidence. They commented that Forest School seemed to remove barriers to learning which some of the pupils faced. However, information available about this project is brief and consists of anecdotal evidence from adults involved, therefore it contributes little to the programme specification, according to Gough's (2007) framework.

The same training centre (Archimedes Training) provided a 14-week programme (1 day per week) for children attending a special school. Programme aims were to develop relationships with peers and positive adult role models, and to raise the confidence of the learners (Archimedes Training, 2011b). Key reflections from the FSLs were that more social interaction was observed as the programme developed and children were less likely to need prompting to help each other (Archimedes Training, 2011b) The FSLs also noted a consistent three-stage pattern of behaviour, beginning with an acclimatisation stage involving 'neutral behaviour' while the children got used to the novel environment. The second stage consisted of boundary testing, where some challenging behaviour might be observed, but finally an improvement stage was noted, where children either returned to their initial 'neutral' behaviour, or developed more appropriate behaviour (Archimedes Training, 2011b).

This pattern of behaviour suggests that Forest School may need to run for a minimum of 14-weeks in order for Forest School to begin to have an effect. Archimedes Training (2011b) propose a minimum of 30 weekly visits to Forest School is required for young people to experience positive outcomes. However, the case study is extremely brief, highly anecdotal and does not offer further information on the case study participants. Therefore, this case study will be drawn on cautiously for programme specification development.

Ritchie (2010) briefly reported a project in a London secondary school where Forest School was used for a variety of purposes, including team building for new form groups and alternative curriculum for pupils with SEN at risk of exclusion. Again, the report is highly anecdotal and brief, with no specific information about methods of data collection or participants. Ritchie (2010) indicates that the aims of Forest School in this context were to boost emotional literacy, increase attainment and support inclusion.

Findings suggest that FSLs running the project felt it was cost effective and had a positive impact on pupils (Ritchie, 2010). An independent evaluation of Forest School by the school's Educational Psychologist (EP) found that it was difficult to gauge Forest School's effects on academic attainment, as the less able pupils were receiving other interventions alongside Forest School, but the programme seemed to result in fewer exclusions, raised pupil attendance and improved pupil self-esteem (Ritchie, 2010). However, full details of this evaluation are not provided so it cannot contribute much to the programme specification.

Sussex Wildlife Trust, Brighton and Hove Youth Offending Team (YOT) and 'Ru-Ok?' (a substance misuse service in Brighton and Hove for under 19s) used a case study to investigate the effects of a Forest School programme (Action for Children, 2010). Data was gathered in the form of discussions between FSLs and FSL reports on young people attending the programme. The project offered Forest School to young people who were known to the YOT or 'Ru-Ok?' (numbers not provided) for ten weeks during 2008 – 2009. The reported outcomes included improvements in young people's well-being and enhanced confidence with independent or group-based working. No major incidents of aggression or dangerous behaviour were observed during the young people's time at Forest School and all stakeholders (including the young people) wanted it to continue (Action for Children, 2010).

Action for Children (2010), Ritchie (2010) and Archimedes Training (2011a; 2011b) provide case study accounts which are limited in detail but which report positive impacts of Forest School on young people with SEN. Although the RS is inclusive in its approach to using all available literature for programme development (Pawson, 2006), accounts such as these which are lacking in detail provide limited information on the quality and trustworthiness of the findings (Gough, 2007). Additionally, the potential for bias due to possible vested interests of researchers means that findings need to be treated very cautiously. Therefore, the programme specification developed from the RS (appendix 8.2) reflects a limited dependence on these poor quality accounts.

Weaknesses in the evidence base of Forest School, particularly when used with older children or those with SEN, reflects the relatively new development of Forest School as an alternative provision for young people with additional needs (Knight, 2011a). Indeed,

the literature search revealed only two research papers reporting on the impact of Forest School for pupils with SEN which have been published after peer review (Roe and Aspinall, 2011a; Roe and Aspinall, 2011b), which are described henceforth.

Roe and Aspinall (2011a) conducted a controlled study with 18 11-year-olds to understand the effects of Forest School experience versus conventional schooling on children's mood and their ability to reflect on personal goals. The young people were split into two groups based on school staff's rating of behaviour: 'good' and 'poor'. The 'good' behaviour group consisted of n=6 pupils from a mainstream secondary school. The 'poor' behaviour group were recruited from a different mainstream secondary school (n=4) and a residential special school for boys with behavioural difficulties (n=8).

The Mood Adjective Checklist (MACL) (Mathews, Jones and Chamberlain, 1990) was used to assess mood through ratings of participant's energy, stress, anger and hedonic tone. 'Personal Projects' (Little, 1983) was used to assess young people's reflections on their personal goals. All assessments were taken pre and post a Forest School day and compared with scores pre and post a conventional school day. There were no significant differences found between the groups on pre-intervention MACL measures. Post intervention MACL results found significantly more positive mood after young people had attended a Forest School day in comparison to a conventional school day (anger p=0.02; energy p=0.007; stress p=0.05 (borderline) and hedonic tone p=0.007).

The effect sizes were significantly greater for pupils with teacher ratings of 'poor' versus 'good behaviour' for energy (p=0.034) and stress (p=0.034). Results were borderline for hedonic tone (p=0.05) and no significant difference was seen between the groups for anger (effect size not available). There was a positive trend for reflection on personal goals, although no main effect. This research therefore suggests that exposure to Forest School had positive effects on the mood of 11-year old pupils, particularly if they had existing teacher rated poor behaviour. Roe and Aspinall (2011a) attribute this to the Forest School ethos and exposure to a natural environment, but only briefly explore how these features may have caused the changes observed. Also, it appeared that measures were only taken on four 'snapshot' occasions (pre and post Forest School and convention school days), potentially limiting the validity of findings.

Roe and Aspinall (2011b) further observed the emotional responses of eight boys (aged 10-12) ethnographically over a 6-month period at a Forest School. The participants attended a secure residential special school in Scotland for support with *"severe trauma and mental disorder"* (ibid, p. 539) and Forest School was part of the pupil's alternative curriculum. Data gathered focused on the functional properties of the environment, for example a tree being 'climbable' and the branches 'swingable' and the potential this had to elicit an emotive response in the pupils. The authors felt that, due to participant vulnerability, it was not appropriate to record or directly observe them, so data was collected at the end of the session, when the researchers recorded their memories of the day into a Dictaphone. This may have meant that only salient points of the day were recalled, and pupil's exact speech may have been forgotten, however the researchers felt their actions were justified due to ethical considerations of avoiding causing distress to participants (British Psychological Society, 2010).

Over time, Roe and Aspinall (2011b) reported that trusting relationships, social cohesion and explorative activity contributed to the positive affect experienced by the boys at Forest School. The field data generated 700 instances of emotional reactions, which Roe and Aspinall (2011b) considered to fit into the following themes: trust, joy, anticipation, surprise, anger, fear, disgust and sadness. Roe and Aspinall (2011b) found that over time, there was an improvement in the young people's social cohesion, explorative behaviour, creative activity and a reduction in behavioural outbursts at Forest School. Roe and Aspinall (2011b) further postulated that attention restorative theory (Kaplan, 1995) could be used to explain the restorative effect of Forest School, as the environment seemed to elicit curiosity in the young people which, according to Kaplan (1995), requires effortless attention and triggers a restorative effect.

Due to the significant nature of participant's emotional needs, Roe and Aspinall (2011b) were unable to gain comparative data by also observing the pupils in the residential special school, reportedly because the frequency and severity of emotional outbursts in the school were too great. This may suggest that the restorative effects of Forest School did not transfer to the school setting (Roe and Aspinall, 2011b), or that pupils were calmer at Forest School so they could cope with the presence of researchers there. As Roe and Aspinall (2011a; b) have been published, use a methodological framework and investigate the effects of Forest School on young people with SEN, these studies are

relevant to the case study population and therefore feature confidently in the programme specification (Gough, 2007).

2.13 Forest School Research Targeting Forest School Practitioners

As FSLs are involved in running Forest School programmes over time, they are in a good position to have an understanding of the contextual features of the programme, the outcomes for children and how these may have come about. Therefore, research targeting FSLs is included here and in the programme specification.

Although Waters and Begley (2007) suggest that Forest School could improve children's appropriate risk taking, different attitudes towards exposing children to risk were found between Forest School leaders and teachers in a study by Maynard (2007a). Maynard (2007a) interviewed two FSLs and two early years teachers about the programme they were running for 25 children (16 in Reception and 9 in a special teaching facility aged 5-7). The children in the special teaching facility had a range of 'significant and complex learning difficulties'. The programme was run by qualified FSLs and ran for 16 weekly sessions in natural woodland. The data included interviews with the teachers and FSLs before and after the project and follow up interviews with the teachers after the project ceased.

Maynard (2007a) explored the relationship between early years teachers and FSLs using discourse analysis. The analysis showed a complex relationship between teachers and FSLs, stemming largely from differences in opinion about the amount of risk children should be exposed to and managing the balance between adult-led and child-led learning (Maynard, 2007a). Findings suggest that FSLs wanted children to make their own decisions, in contrast to teachers who wished to draw children's attention to things and direct their play (Maynard, 2007a). The teachers *"appeared to have a high level of control and were both directive and protective"* (Maynard, 2007a, p. 385).

In contrast, the Forest School leaders *"were observed to adopt a quieter, more facilitative style"* (Maynard, 2007a, p. 386). Although this caused some tension between the professionals involved, particularly when teachers intervened when they felt the risk was too high, by the end of the programme the teachers had begun to question their approach in terms of how directive they were. The teachers acknowledged that this was a result of constraints on their practice as set by strategic policy documents, such as the

National Curriculum (DfEE, 1999). This study therefore highlights not only some potential frictions caused by practitioners with different approaches and agendas, but also the potential of Forest School to work systemically, not only impacting on children but on the teaching professionals in terms of giving them time and stimuli to reflect on their own professional practice. This research supports programme specification development by illuminating characteristics of FSLs which enhance the programme (Gough, 2007). It is also is likely to be relevant to Forest school programmes which are run and facilitated by teaching staff, but the small sample makes the findings difficult to generalise.

Swarbrick, Eastwood and Tutton (2004) aimed to explore the hypothesised link between Forest School, self-esteem and learning through administering questionnaires to FSLs in Oxfordshire. Of the 100 questionnaires sent out, 29 were returned from FSLs working with pupils from nursery to KS4, including pupils with SEN. The report highlights responses from FSLs in relation to the effects they had noticed for the children they were working with. For example, it was reported that a child with severe speech and language difficulties was heard speaking more clearly and loudly at Forest School, despite making little progress with intensive speech and language therapy. Another FSL reported that a disaffected teenager became enthusiastic about Forest School enough to write and deliver a presentation on it to others (Swarbrick, Eastwood and Tutton, 2004).

Swarbrick, Eastwood and Tutton (2004) also provide some helpful insight into what are considered 'negative mechanisms' (Pawson and Tilley, 2004) or hindering factors, such as the reluctance of some children to want to get dirty, or difficulties staffing high adult to child ratios required. The evidence gained, however, was highly anecdotal in nature and consists of case study information from practitioners. There was also evidence of potentially leading and closed questions within the questionnaire, such as 'In your opinion would the Forest School experience be of benefit to every child?' which may have contributed to overly positive answers or limited the detail of response. However, the practitioners completing the questionnaires know Forest School well and therefore are a group that should be targeted for providing information (Pawson and Tilley, 1997). Therefore, despite the methodological flaws in this study, some of the findings are of value to the initial programme specification of the present study (appendix 8.2).

Another study focused on the views of three FSLs working with children aged 3-5 years (Maynard, 2007b). Maynard (2007b) gathered data by analysing programme documentation and conducting semi-structured interviews with each FSL about their view of the aims of Forest School. The interviews were coded according to the features of Forest School described, such as children attending over time and the activities and games used. Each practitioner's individual perspective about the aims of Forest School was explored which led to identification of three main outcomes for children: self-esteem, self-confidence and independence (Maynard, 2007b). An additional element was encouraging children to *"appreciate, care for and respect the natural environment"* (Maynard, 2007b, p. 323). Each FSL discussed their view of how these changes occurred, which included views on the importance of the natural environment, positive adult-child relationships, the availability of natural play and opportunities to take risks.

However, Maynard (2007b) noted subtle differences in the practitioner's views, particularly in relation to the emphasis placed on the programme's capacity to raise self-esteem, the identification of different learning styles and how some projects can overlook the opportunities to learn about the natural environment. FSLs description of contextual features of Forest School in Maynard (2007b) is helpful for programme specification development (Gough, 2007), for example the notion that Forest School can support children in accessing the EYFS curriculum (DfE, 2012). However, the small sample size limits generalisation and a lack of triangulated evidence using other stakeholder perspectives, such as parents, teachers and children creates limits to the findings of this study.

In order to define the Forest School experience, Knight (2011b) conducted a thematic review of fourteen accounts by FSLs (Knight, 2011a) which reflect the use of Forest School with children from 2-19 years in a variety of settings in the UK, including those with SEN. Through this, Knight (2011b) aimed to co-construct the implicit features of Forest School using grounded theory (Charmaz, 2006) before testing the transferability of these features for use with particular groups of young children. Once key themes were identified, observations and interviews with children and Forest School practitioners were used to refine the themes (Knight, 2011b). Through thematic analysis of the information gained from FSLs, Knight (2011b) developed an overlapping

conceptual framework to illustrate the domains to which Forest School has relevance (Fig. 2.3).

Figure 2.3 Knight's (2011b) overlapping conceptual framework
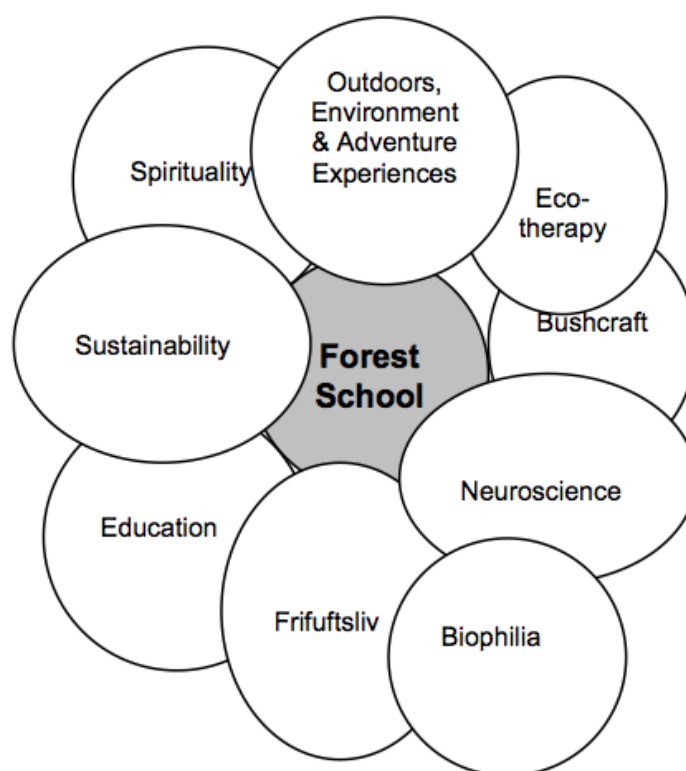
<div align="right">(Knight, 2011b, p. 594)</div>

Some of the elements identified (Fig. 2.3) feature in the literature presented thus far, for example Forest School's role in facilitating education (Vandewalle, 2010), providing restorative therapy (Roe and Aspinall, 2011b) and promoting children's affinity for being outdoors (Biophilia) (Lovell, 2009a; 2009b). However, other key features have been identified in this literature review which do not feature in Knight's (2011b) framework, such as the opportunity for social development (Murray, 2003) and improvements in behaviour (Roe and Aspinall, 2011a.) Despite this, Knight's (2011b) framework presents a coherent picture of the features of Forest School. This could be used to support FSLs in their thinking about the opportunities provided at a Forest School, and would perhaps enable them to evaluate its outcomes. The conceptual framework supports the development of 'contextual features' of Forest School in the programme specification.

2.14 Discussion and Critical Reflections on the Research

The literature review suggests that Forest School can facilitate positive outcomes for children from a range of settings, including nurseries (Waters and Begley, 2007) mainstream primary schools (Lovell, 2009a; 2009b), mainstream secondary schools (Ritchie, 2010) special schools (Roe and Aspinall, 2011a; 2011b) and groups in the community, such as the YOT (Action for Children, 2010). Researchers have targeted different age groups of children in the UK, including preschoolers (Massey, 2004), primary age pupils (Ridgers, Knowles and Sayers, 2012) and pupils in Key Stage 3 with SEN (Roe and Aspinall, 2011a; 2011b). However, it would appear that research is somewhat lacking with mainstream secondary age pupils and Key Stage 4 pupils with SEN.

Most research studies reviewed have focused on the outcomes for the child using multi-method qualitative approaches to triangulate information (Massey, 2004; O'Brien and Murray, 2005; 2006; 2007). Some have focused on the perspective of particular groups, such as FSLs and teachers (Maynard 2007a; 2007b) or only sought the views of the children (Ridgers, Knowles and Sayers, 2012). O'Brien and Murray (2005; 2006; 2007) suggested that future research should include the voice of the children, although some researchers have chosen to reject this idea on the grounds of ethical working when pupils are extremely vulnerable due to their past experiences (Roe and Aspinall, 2011b). Studies which have taken an explorative, qualitative approach (Murray, 2003; Massey, 2004; O'Brien and Murray, 2005; 2006; 2007, Maynard, 2007b) report a similar range of outcomes for children and young people, particularly in their confidence, motivation, social development, knowledge of the world and language development. Other researchers report other positive effects and outcomes for example in the domains of appropriate risk-taking (Waters and Begley, 2007), development of play (Ridgers, Knowles and Sayers, 2012), restorative outcomes (Roe and Aspinall, 2011a) and increased physical activity (Lovell, 2009a; 2009b).

Some studies took steps to address validity issues such as collecting data which can be put to statistical test (Lovell, 2009a; 2009b; Roe and Aspinall, 2011a) or using critical, independent others to analyse their themes (Waters and Begley, 2007; Ridgers, Knowles and Sayers, 2012). However, much of the research is still based on anecdotal evidence, case study data and descriptions of practice (Ritchie, 2010; Vandewalle, 2010) which is

not triangulated or refined through scientific measures (Swarbrick, Eastwood and Tutton, 2004; Massey, 2004; Knight, 2011a). Therefore, I would concur with Swarbrick, Eastwood and Tutton's (2004) suggestion that Forest School is not well represented in the academic literature, even a decade after they first made this observation.

2.15 Findings of the Realist Synthesis (RS)

It is acknowledged that a limitation of the RS is that the initial programme specification was developed by a single researcher, who ultimately decided which elements of previous research to use for programme specification development. However, a systematic search strategy was taken to ensure searching for appropriate literature was thorough and Gough's (2007) Weight of Evidence framework was adhered to when deciding which studies were of higher quality and relevance, and therefore used more extensively to develop the initial programme specification. Also, part of the RE is that initial theories are refined, refuted or accepted through a cycle of research (Pawson and Tilley, 1997), so if any initial CMOCs from the RS prove irrelevant to the current study there is opportunity to refine these based on evidence gathered in the RE.

The aim of this RS was to address the review question 'what does the existing literature report about features of the context, mechanisms and outcomes of a Forest School programme?' The full answer to this question can be found in the initial programme specification (appendix 8.2) which is the first set of context+ mechanism = outcome configurations (CMOCs) attempting to explain how Forest School works. This is included in the appendix because it is very large, and also because the programme specification will change as a result of the RE.

The RS programme specification presents nine themes relating to areas of development which may be improved due to the Forest School experience. These are confidence, social skills, language and communication, motivation and concentration, physical skills, knowledge and understanding, emotional well-being and behaviour, new perspectives and ripple effects. Eight of these themes (all except emotional well-being and behaviour) were explicitly outlined in a large action research project into Forest School (O'Brien and Murray, 2005; 2006; 2007). Another theme (hindering aspects) arose from the identification of aspects which reduced the programme's effectiveness,

such as low levels of staff enthusiasm for Forest School in bad weather (Swarbrick, Eastwood and Tutton, 2004) and the possibility that children may be frightened by an open woodland (Davis and Waite, 2005). However, some information was lacking from the research reviewed, which meant that the initial programme specification for Forest School is incomplete, as illustrated by an extract from the outcome theme of 'knowledge and understanding' in table 2.3.

Table 2.3 Extract from the Initial Programme Specification (appendix 8.2)

Context	Mechanism	Outcome	Source
Opportunities for skills and knowledge gained at Forest School to be linked to other contexts (e.g. school/home)	?	Skills, knowledge and understanding are transferred into other contexts	Murray (2003) O'Brien and Murray (2005) Ridgers, Knowles and Sayers (2012)

As other CMOCs also featured missing elements, particularly mechanisms which are often 'hidden' (Pawson and Tilley, 1997), an aim of the present study is to test this initial programme specification. It is hoped that this will gain further evidence which can be used to add to, disregard or support parts of the programme specification and enable CMOCs such as those presented in table 2.3 to be completed.

2.16 Context of this Study

Despite some concerning methodological issues, the overarching message from the available literature is that Forest School can lead to some positive outcomes for children and young people, which suggests it is worthy of further study. The literature review has highlighted gaps in the existing research in terms of participant age and needs, in that studies have not yet investigated the impact of Forest School with young people over 12 years old who have SEN. Therefore, in order to fill this gap in the literature, the current study aims to investigate Forest School with this population.

Borradaile (2006) has demonstrated that it is possible to study whether previous understanding of Forest School outcomes (O'Brien and Murray, 2005; 2006; 2007) transfer to other settings. In line with RE, the information gained in the RS about how Forest School works for younger children will therefore be tested to understand the

extent to which it applies to secondary age learners in KS4 who have SEN. Additionally, the existing dominance of anecdotal evidence in the current literature suggests that a more rigorous scientific methodology which is also applicable to a 'real world' (Robson, 2011) context is required. Through use of RE, it is envisaged that this study will extend existing Forest School research by being the first to consider Forest School through C+M=O configurations, and therefore possibly one of the first to attempt to present Forest School in such a high level of detail.

2.17 Study Aims and Research Questions

It is envisaged that the results of the evaluation will extend the growing body of research into Forest School in the UK, and could be used to inform the practice of secondary mainstream and special schools within the LA setting of the research and similar contexts further afield. The research questions this study aims to address are:

1. What are the important context, mechanism and outcome configurations of Forest School with young people aged 14-16 who have SEN?
   1.1 What are the features of the Forest School context which set up mechanisms of change?
   1.2 What are the mechanisms which enable outcomes to occur for the young people?
   1.3 What are the outcomes for 14-16 year olds with special educational needs who attend Forest School?
   1.4 What are the most critical context, mechanism and outcome configurations, according to key stakeholders?

Chapter 3. Methodology

3. 1 Introduction

This chapter begins by offering a detailed account of the epistemological background of this evaluation, namely 'scientific realism' (Pawson and Tilley, 1997). A key aim of this section is to explain why this approach has been adopted in preference to other epistemologies and methods which might have provided frameworks for developing an understanding of how Forest School works. This chapter begins by exploring features of traditional evaluation before explaining and justifying the use of Realistic Evaluation (RE), which offers a generative model of causation within a scientific realism paradigm (Pawson and Tilley, 1997). RE is then defined in relation to the current study, which leads to justification for the choice of methodology and data collection tools employed to address the research questions identified in the Realist Synthesis (RS). An account of the procedure is presented with regard to data collection and analysis. Ethical considerations are explained and discussed as a critical element of the research. Finally, threats to validity and reliability are discussed alongside steps taken to address them.

3.2 Evaluations and Research

Evaluations and research are conducted across disciplines and cultures in order to understand more about the world in which we live and to enhance people's experiences and potential (Pawson and Tilley, 1997). Pawson and Tilley (1997, p. xi) state that *"nowadays, the task of improvement through understanding has become a profession"*, indicating that a drive for knowledge is commonplace and well regarded in the current social and political culture. Evaluations and research aim to drive knowledge forward and therefore improve decision making by providing evidence-based answers to a variety of questions (Cohen, Manion and Morrison, 2011).

Evaluations and research are fundamentally striving for understanding, but subtle differences in terms of timing may exist between them, as evaluations are more common when programmes are already occurring, whereas research often happens prior to programme launch, particularly within the medical community (Cohen, Manion and Morrison, 2011). Although the operational aspects of evaluation and research have similarities, there are differences between their conceptual and political features (Cohen, Manion and Morrison, 2011). Differences can often relate to the audience for whom the

work is intended, their scope (evaluations being generally more limited) and the purpose and use of the work (Cohen, Manion and Morrison, 2011). There appears to be some trends towards evaluations within education as researchers are often required or motivated to evaluate the effectiveness of particular programmes or interventions once they have started (Cohen, Manion and Morrison, 2011; Bozic and Crossland, 2012).

Although evaluating the effectiveness of interventions or programmes already occurring is necessary for the understanding of practitioners and policy makers, validity can be compromised if commissioners have a vested interest in gaining positive results from an evaluator. Evaluations which are independent of financial, political or pragmatic influences of a sponsor are therefore likely to be more valid and reliable (Cohen, Manion and Morrison, 2011). The RS highlighted some examples of research which may have been commissioned by organisations eager to promote Forest School, but the driving force behind the current study is researcher motivation to understand how the programme works. Therefore, the current study is free of ties which might jeopardise researcher independence, although it is acknowledged that researcher interest and previous experience of Forest School may influence how the programme is viewed. Therefore, wherever possible steps have been taken to avoid bias including piloting, inter rater reliability, triangulation of evidence and a high level of motivation by the researcher to ensure the research is as robust, accurate and scientific as possible.

3.3 Epistemology

Epistemology is defined as *"the theory or science of the method of grounds of knowledge"* (Oxford English Dictionary, 2013) and is therefore concerned with how knowledge and truth is constructed. A researcher's own concepts about how knowledge can be gained influences their actions throughout research and the methods used to gather and analyse data within the research design (Cohen, Manion and Morrison, 2011). Positivist inquirers hold a view that there is a scientific truth which can be discovered by controlling variables to ascertain causality (Cohen, Manion and Morrison, 2011). Although positivists may be likely to claim *"science provides us with the clearest possible ideal of knowledge"* (Cohen, Manion and Morrison, 2011, p. 7) it has been criticised because high levels of control ignore the subtleties or heterogeneity of participant groups and can yield different results when replicated (Concato, Shah and Horwitz, 2000; Pawson and Tilley, 1997). Traditional meta-analyses of positivist

research has not given a *"stockpile of solutions to the ills and inequalities confronting modern society"* (Pawson, 2006, p. 42) therefore, an alternative is sought.

Interpretivism, arguably at the other end of the epistemological spectrum to positivism, considers that reality is constructed individually through the interpretation of meaning (Goodman, 1978; Molder, 2010). This therefore suggests that a shared truth does not exist, but exists only as it is experienced by individuals, essentially reducing social science to individual interpretation of meaning (Sayer, 2000). As a shared understanding of reality is sought in this evaluation, realism is proposed as an area of 'middle ground', steering *"a path between empiricist and constructivist accounts of scientific explanation"* (Pawson, 2006, p.17), where contextual factors such as individual idiosyncrasy can be accounted for whilst also striving for a shared understanding of truth (Bhaskar, 2008). Davies (2011) offers a helpful summary of the features of these three described epistemological dimensions, sourced from Thistleton (2008) and Cohen, Manion and Morrison (2007).

Figure 3.1 Comparisons of Epistemological Dimensions (Davies, 2011)

Dimensions of comparison	Ontology and Epistemology	The role of social science	Research	Human behaviour	Research Methods
Positivism	The world exists and is knowable as it really is. This conflates ontology and epistemology and ignores epistemology *Ontology* is flat since what is observed is all that exists	Discovering universal laws of human behaviour and of society	Experimental or quasi-experimental validation of theory	Social Scientist is an observer of social reality. Respondents are treated as objects, informants or producers of data	Quantitative methods
Realism	Realism holds that reality exists independent of social actors and observers There is a distinction between: • the intransitive dimension (the objects of science) *and* • the transitive dimension (the understanding of the intransitive dimension, including theories of science) Because our understanding of the world may change this does not mean that the world itself changes *Ontology* is stratified and the world is characterised by emergence	Inventing theories to explain the real world and testing these theories by rational criteria	Explanation is concerned with how Mechanisms produce events and in what circumstances	Observable human behaviour is characterised by underlying intention and choice. Understanding this is part of the research process	Mixed methods. The researcher chooses the method which best fits the investigation
Interpretivism	There is no objective reality since reality can only be constructed through a conceptual system This conflates ontology and epistemology and ignores ontology	Discovering how different people interpret the world in which they live	The search for meaningful relationships and the discovery of their consequences for action	The importance of viewing the meaning of experience and behaviour in its full complexity is stressed	Qualitative methods

(Davies, 2011, p. 102, adapted from Cohen, Manion and Morrison, 2007 and Thistleton, 2008)

Positivism and interpretivism are rejected in this study as not able to satisfactorily meet the aims of the evaluation, as neither can take account of critical contextual features and mechanisms while striving for a shared understanding of *"why a program works, for whom and in what circumstances"* (Pawson and Tilley, 1997, p. xvi). This understanding can be gained through a realist perspective, which stresses the *"mechanics of explanation"* (Pawson and Tilley, 1997, p. 55) and can therefore be generalised (to some extent) to other settings who may be considering how to implement successful programmes (Pawson, 2006).

Therefore, this study aims to identify features necessary for a successful Forest School programme with young people aged 14-16 with special educational needs (SEN), as well as providing the case study school with some outcome data. These aims require a realist view that reality exists yet our view of it can change and is modified through a cyclical process where theories are developed and tested (Pawson, 2006). An action research framework (Reason and Bradbury, 2001) could have been employed within the realist paradigm, but this has also been rejected on the grounds that the researcher does not aim to alter the current programme.

3.4 Scientific Realism

Realism develops and tests theories in order to understand how social programmes work (Sayer, 2000; Bhaskar, 2008). It strives for a truth based on evidence which is gathered to meet the aims of the evaluation, aiming to *"combine scientific measurement within a sociological view of data construction"* (Shepherd, 2011, p. 56). Scientific realism (Pawson and Tilley, 1997; Pawson, 2006) measures what is present and measureable at a point in time and provides results in terms of a 'provisional theory' (Bozic and Crossland, 2012), presenting outcome patterns rather than regularities (Pawson, 2006).

It can, therefore, be criticised for failing to propose a stable and generalisable truth, but suggests that social programmes constantly vary due to a range of aspects, such as individual characteristics, which would rarely be the same on replication. Indeed, the theory is likely to change and develop when applied to other settings because *"our actions are always prone to change the conditions that prompt them"* (Pawson, 2006, p. 18). Social programmes are influenced by a range of factors, as illustrated in Fig. 3.2.

Therefore, an epistemological framework which captures and values this complexity is required when attempting to understand phenomena in the real world.

Figure 3.2 Programme Complexity (Pawson, 2006).
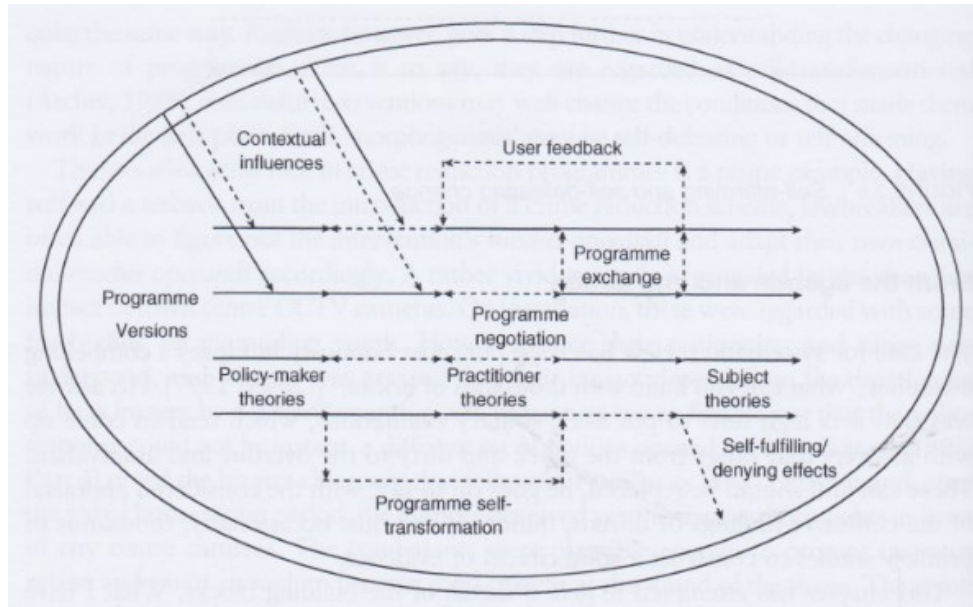
Realists consider that the variety of factors illustrated in Fig. 3.2 influencing programmes means *"we can never exercise control over all the historical and contemporaneous, macro- and micro-conditions that have influenced the situation we wish to explain"* (Pawson, 2006, p. 18). Therefore, realists reject a positivist approach which they consider fails to account for the complexity of these open systems. Methodologies employed within a scientific realism framework strive to critically consider the evidence which should enable hypothesised theories to be accepted, rejected or refined (Pawson and Tilley, 1997). A RE develops theories by drawing out evidence from the data iteratively to test out the hypotheses raised in the Realist Synthesis (RS) to ultimately accept, reject or refine elements of the programme specification. This view of causation is different to a more traditional, linear X $\rightarrow$ Y approach as it draws upon a system of 'generative causation' to provide a framework for programme specification development (Pawson and Tilley, 1997).

3.5 Generative Causation and Realistic Evaluation (RE)

RE views causation as 'generative'. Generative causation considers outcomes as the results of actions following from a mechanism acting in a particular context, as presented diagrammatically in Fig. 3.3.

Figure 3.3 Generative Causation (Pawson and Tilley, 1997)
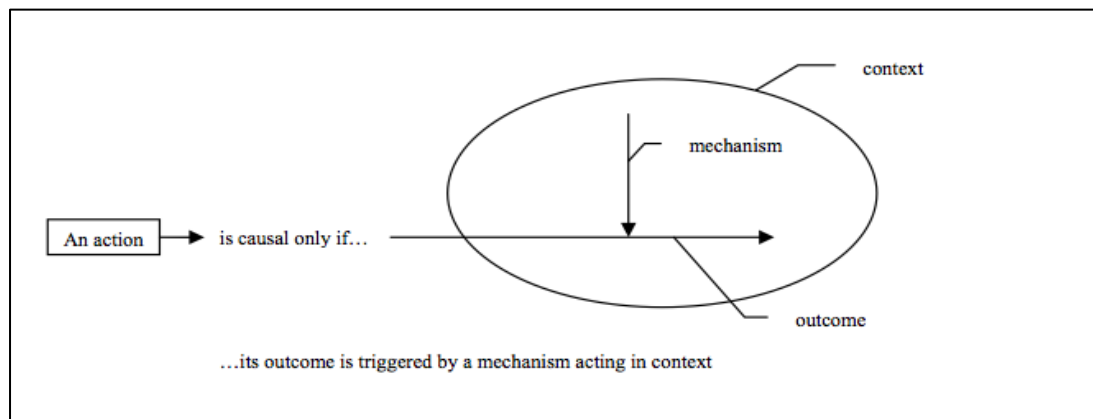
(Pawson and Tilley, 1997, p. 58)

Pawson and Tilley (1997) explain that theories about how programmes work are made up of a set of context + mechanism = outcome configurations (CMOCs). In order to explain this, the authors refer to the example of the ignition of gunpowder, as also illustrated in chapter 2. Pawson and Tilley (1997, p. 58) suggest that *"gunpowder has within it the causal potential to explode, but whether it does so depends on it being in the right conditions."* Therefore, although gunpowder has the potential to ignite, if the conditions are not right (i.e. it is damp, insufficient powder or oxygen), it will fail to. Pawson and Tilley (1997) propose that the same is true for social programmes; although individuals may have the potential to change, this depends on the correct conditions.

Pawson and Tilley (1997) offer an example with human participants where contextual factors altered human thinking (the change mechanism) to produce an outcome. They describe a scenario where cameras were installed in a car park and the frequency of car theft and damage reduced. Clearly, the cameras do not physically act to stop theft, but they impact upon the individual's thought mechanisms and subsequently may alter the outcome, i.e. the potential thief or vandal does not commit a crime. Although superficially a simple example, Pawson and Tilley (1997) suggest there are several potential mechanisms at work, including individuals being concerned about being

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caught, car users being more likely to use a car park with CCTV and the requirement for CCTV to be monitored may bring security officers to the car park more frequently, presenting an additional deterrent. Even in a seemingly simple scenario, there may be several mechanisms at work. Proponents of RE argue that these often hidden mechanisms can be illuminated through targeting individuals who are likely to know what these mechanisms are (Pawson and Tilley, 1997).

Although Pawson and Tilley (1997) focus their examples on crime prevention and offender rehabilitation, evaluators have more recently demonstrated successful use of RE within children and family services (Thornbery, 2012; Bozic and Crossland 2012; Davies, 2011; Webb, 2011; Soni, 2010; Thistleton, 2008). RE is a theory-building evaluation (Thornbery, 2012) which explores the mechanisms of change for individuals or groups within a specific context. Rather than focusing solely on outcomes, RE allows researchers to develop an understanding of the necessary conditions for success (Bozic and Crossland, 2012) which can be disseminated to practitioners striving to gain positive outcomes from programmes or interventions (Thornbery, 2012).

3.6 Context, Mechanisms and Outcomes (CMOs) in a Realistic Evaluation

Within RE, theories are built and tested through a cycle of developing context, mechanism and outcome configurations (CMOCs) which explain how programmes work: *"programmes work (have successful 'outcomes') only in so far as they introduce the appropriate ideas and opportunities ('mechanisms') to groups in the appropriate social and cultural conditions ('contexts')* (Pawson and Tilley, 1997, p. 57). A complete set of CMOCs makes a 'programme specification' (Pawson, 2006), which is continuously refined after new information is gathered. Contextual features include the individual capacities, interpersonal relationships, institutional settings and the wider infrastructure which is relevant to the intervention or programme under scrutiny (Pawson and Tilley, 1997). The role of these four factors to the context is represented in Fig. 3.4.

Figure 3.4 The intervention as a product of its context (Pawson, 2006)
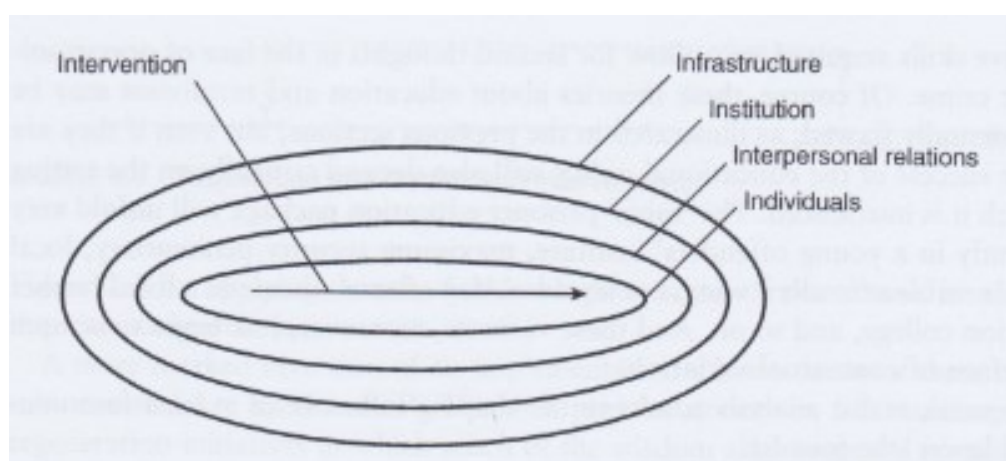
REs acknowledge that programmes are complex and have different meanings for different people, i.e. a Forest School programme will be viewed slightly differently by programme designers, implementers, commissioners and young people involved (Pawson, 2006). Therefore a design which can capture this complexity through understanding multiple viewpoints as contextual features of the programme is required.

Mechanisms are described as the *"engine of explanation in a realist analysis"* (Pawson, 2006, p. 23) and the *"choices and capacities which lead to regular patterns of social behaviour"* (Pawson and Tilley, 1997, p. 216). This might occur through *"the ideas and opportunities which are introduced through the programme"* (Thornbery, 2012, p. 31) and describe how the resources offered generate outcomes. Scientific realists appreciate that *"programmes do not work the same way for everyone"* (Bozic and Crossland, 2012, p. 8) so individual differences between people for whom the programme is intended to effect would be likely to impact upon the mechanism (Soni, 2010).

RE assumes variation in multiple outcomes, which are the intended and non-intended products of a social programme within a particular context (Soni, 2010). Positivist research may focus on outcomes, but in a RE *"outcomes are not inspected simply in order to see if programmes work, but are analysed to discover if the conjectured mechanism/context theories are confirmed"* (Pawson and Tilley, 1997, p. 217). This suggests that outcomes are not seen as separate but embedded in the programme theory alongside contextual features and mechanisms.

3.7 Designing a Realistic Evaluation

In a RE, the CMOCs should be initially developed through a Realist Synthesis (RS) (Pawson, 2006) by extracting relevant data from the literature. As discussed in chapter 2, during a RS the literature is examined for information about contexts, mechanisms and outcomes which the researcher abstracts to develop the first programme specification, or the first set of CMOCs (appendix 8.2). This initial programme specification is a set of hypotheses to be tested and is used to develop the research questions based on identified gaps in the knowledge of the existing literature. The research questions are then used to design the data collection tools which test out the initial programme specification to see whether or not, or to what extent, it applies to the social programme in question (Pawson and Tilley, 1997). When conducting the case study RE, themes which have emerged through the RS will be explored deductively, but the researcher also intends to be open to new, previously unknown themes emerging inductively through the case study (Soni, 2010). This process is presented in Fig. 3.5

Figure 3.5 Realistic Evaluation Cycle (Pawson and Tilley, 1997)
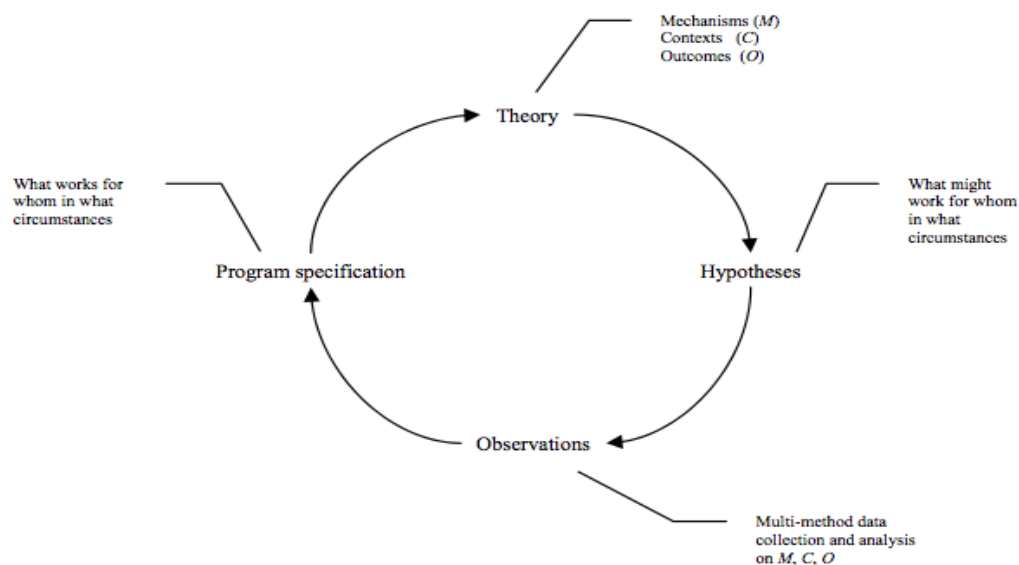
(Pawson and Tilley, 1997, p. 85)

The Realistic Evaluation framework states that any methodology can be used to gather information, "*it is quite possible to carry out realistic evaluation using: strategies, quantitative and qualitative; timescales, contemporaneous or historical; viewpoints, cross-sectional or longitudinal; samples, large or small; goals, action-orientated or*

audit-centered; and so on and so forth" (Pawson and Tilley, 1997, p. 85). The only requirement of a RE in terms of data gathering is that the data must be appropriate and rich enough to enable the researcher to develop and refine the programme specifications (Pawson and Tilley, 1997). In a RE (Fig. 3.5), the method is derived from the hypothesis developed in the initial programme specification, which continues to develop as more data is gathered as part of the RE cycle.

Programme specification refinement includes supporting, adding to, altering or deleting the existing set of CMOCs, based on the information available from data gathering (Pawson and Tilley, 1997). After the specification refinement has occurred, the people who know the programme well will be asked to comment on the refined programme specification, as part of a Realist Interview (RI). This enables the researcher to check that the data collected has been accurately interpreted (Pawson and Tilley, 1997). Information gained in the RI will then produce another refined programme specification. The RE process is summarised in Table 3.1.

Table 3.1 The Realistic Evaluation process (from Timmins and Miller, 2007, p. 10).

Stage	Action
1	A programme theory is constructed, based on a review of relevant research literature and expert/practitioner knowledge (Realist Synthesis).
2	An initial programme specification is derived from the programme theory, which maps the programme in terms of assumed Cs, Ms and Os.
3	Hypotheses are derived from the initial programme specification.
4	An evaluation design and associated data gathering plan is constructed and actioned, as suggested by the hypotheses, to help check whether the programme is working as anticipated.
5	Construction of findings that highlight how the programme might be modified or inform replications in other settings (generalisation). This would lead to a clearer and more effective programme specification.

Thornbery (2012) suggests that data collection (step 4) should be obtained from the programme designer, programme implementer and the individuals for whom the programme is designed to effect, relating in this case to the young people attending Forest School. With this in mind, once the RS had informed the research questions, a case study of Forest School for vulnerable learners was designed.

3.8 Case Study Design

In case studies, *"the case is the situation, individual, group, organization or whatever it is that we are interested in"* (Robson, 2011, p. 135). Case studies enable individuals or groups to be studied in great detail, which can be overlooked when large sample sizes are used (Banyard and Grayson, 2000). According to Yin (2009, p. 18) a case study is *"an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context"*. The focus on a 'phenomenon within its real life context' (ibid) suggests that case studies are an appropriate methodology for evaluations interested in contextual features of a programme (Pawson and Tilley, 1997).

Case studies should incorporate different data gathering tools to enable triangulation, including interviews, observations or questionnaires (Robson, 2011). Triangulation involves combining several methods and giving them equal relevance (Flick, 2006). This process enhances the validity of research because it *"helps to balance out any of the potential weaknesses in each data collection method"* (Gray, 2004, p.33). However, there is still a view within the literature that research designs can be categorised in terms of quality of robustness, with meta-analysis and randomised control trials holding the highest place and case studies towards the lower end of the scale (Aslam, Georgiev, Mehta and Kumar, 2012). Critics of the case study method have suggested they lack rigour and fail to address generalisation (Noor, 2008). Therefore, case study data may be poorly regarded in terms of robustness, as illustrated in Figure 3.6.

Figure 3.6 Levels of Evidence Hierarchy (Aslam et al, 2012)
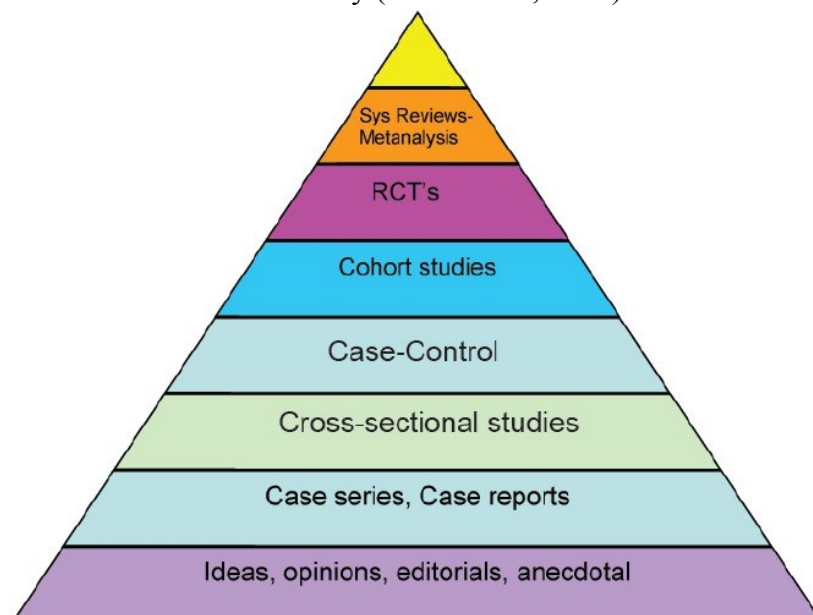
However, Concato, Shah and Horwitz (2000) found that the results of case studies did not over or underestimate the impact of treatment and randomised control trials were criticised for not always yielding the same or similar results on replication and ignoring individual factors which may explain the success of a particular treatment. A case study account of the *"phenomenon in context"* (Robson, 1993, p. 52) of a Forest School programme, should provide detailed information about the CMOCs occurring in this programme. This information will enable systematic development of a programme specification, with clear links to the sources of information to aid traceability and replication. Robson (1993) suggests that case studies can be rigorous, as long as threats to internal validity are considered and addressed appropriately. Therefore, threats to internal validity are presented towards the end of this chapter, including how the threats have been addressed in this case study.

3.9 Procedure

This evaluation intends to develop a programme specification explaining how a case study Forest School works. The process in Fig. 3.7 illustrates how deductive analysis of the existing research produced an initial programme specification which is refined through inductive and deductive case study data analysis to produce a more accurate programme specification.

Figure 3.7 The Realistic Evaluation Process of the Current Study
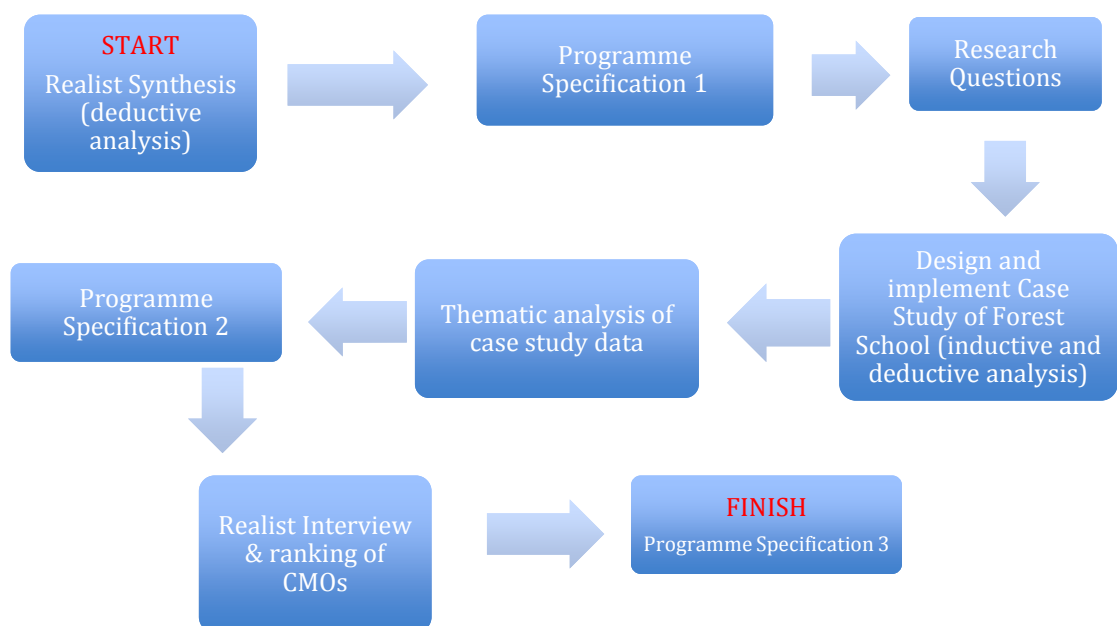
As illustrated in Fig 3.7, two programme specifications will be produced and refined before a final one presents the provisional theory of CMOCs relevant to this case study Forest School. As explained in chapter 2, Forest School is growing in use across the UK (Cree, 2009) and is used in my placement authority. In order to gain information about the use of Forest School in this LA and to consider potential case study locations, an email was sent to every Educational Psychologist (EP) in the county asking whether the schools they were working with used this approach. Many EPs replied suggesting that their primary schools were currently providing Forest School, but no positive responses were received regarding current use in mainstream secondary schools (although two had in the past but funding was no longer available). This request for information from EPs revealed that two secondary special schools in the county had used Forest School for their learners, only one of which continued to invest in the academic year 2012/2013.

3.9.1 Identifying a School and Liaison with Stakeholders

As part of the role as a TEP, I happened to start working with the secondary special school which continued to fund Forest School for some of their learners. 'Oak School' (name changed to protect participant anonymity) caters for the needs of approximately 100 children from Year 5 to Year 14 with moderate learning difficulties, social and emotional needs and autism. Most pupils are White British and over one third are eligible for pupil premium. Oak School pupils who are on the Forest School programme travel to a natural woodland site which shall be referred to here as 'Crow's Wood' (name also changed to protect participant anonymity). Initial meetings were held with Oak School's Assistant Headteacher (with responsibility for coordinating alternative provision) and the Forest School manager at Crow's Wood, in order to explore their level of interest in an evaluation of Forest School and the possibility of Crow's Wood being used as a research site.

Crow's Wood has developed an accredited programme whereby regular participation at Forest School enables young people to meet the criteria for units of National Open College Network qualifications (NOCN, 2013). Pupils on this programme are offered Forest School at the beginning of Year 10 and can choose to continue this to the end of Year 11. At the start of the programme, the young people make a camp and are shown basic tool use, which gradually increases to using power tools. They also receive

training in horticulture, wood skills (e.g. coppicing) and fire lighting, when they have demonstrated an understanding of risk and can follow safety instructions at the site.

Forest School is delivered by two fully trained male Forest School Leaders (FSLs); one from Crow's Wood and the other employed by Oak School. Once ethical approval had been gained from the Nottingham University committee (appendix 8.3), written informed consent was gained from Oak School's Headteacher, Assistant Headteacher and the Forest School Manager at Crow's Wood. All senior leaders expressed interest in the results of the evaluation as a means of assessing the impact of Forest School. Oak School Senior Leadership Team (SLT) were open about their own lack of detailed understanding of Forest School, and suggested that the next step should be to meet with the FSLs.

3.9.2 Participants and Research Context

Information and consent forms were sent via Oak School to the parents/carers of the ten Year 10 and Year 11 pupils accessing Forest School. Five forms were returned to school, with four giving positive consent. Each pupil has a statement of SEN and had already attended Forest School as part of an alternative curriculum package for at least two full academic terms. Table 3.2 illustrates basic characteristics of the pupils who were to be involved in the case study.

Table 3.2 Pupil Participant Characteristics

Code	Sex	Year Group	Nature of SEN
1	M	11	Autism Learning Difficulties
2	M	11	Learning Difficulties
3	F	10	Learning Difficulties Emotional and Behavioural Needs
4	M	10	Learning difficulties Emotional and Behavioural Needs Attention Deficit Hyperactivity Disorder (ADHD)

Although the school sent a reminding text message to parents who had not responded, this failed to yield a higher number of returned forms. Contextually, the school serves a population of low socio-economic status and who experience higher than average levels

of illiteracy in both child and adult generations. Although the response rate was quite low at 40%, Oak School staff suggested that given the vulnerability and illiteracy of some parents, this was in fact an unexpectedly high response, from their perspective. This vulnerability of some of the young people at Oak School was captured during a Forest School Leader's (FSL) semi-structured interview:

"A lot of the kids come from very abusive, disruptive backgrounds and I get kids that come here in the morning and they can't concentrate on anything because they're starving, they haven't slept properly, they haven't eaten properly, they're nicking stuff from the shops on their way here - just so they've got something to eat, something to drink" (Participant A)

The pupils in Year 10 attend Crow's Wood for a full day on a Wednesday with an additional teaching assistant provided by the school (not Forest School trained). The Year 11 pupils have attended Forest School since the beginning of Year 10 for a full day each Thursday. Gaining pupil voice should be a part of research with children and young people (Greig, Taylor and MacKay, 2013) so an aim of this case study is to gather pupil's views so that they can support the development of a programme specification and potentially illuminate how Forest School might work differently for different people. Sampling was purposive in that individuals were targeted due to their knowledge of Forest School and their capacity to comment on aspects of the context, mechanism and/or outcomes (Cohen, Manion and Morrison, 2011). As well as pupils, participants therefore also included parents (n=2), teachers in school (n=2), FSLs (n=2) and TAs supporting the programme (n=2). Multiple sources of evidence was planned to enable data gathered in the case study to be triangulated (Yin, 2009).

3.9.3 Data Gathering Tools

As described above, a range of participants were targeted to give information to inform the development of a Forest School programme specification and this data gathering subsequently required several data gathering tools. Pawson and Tilley (1997) suggest that social programmes are often unique and therefore require bespoke measures. For example, when investigating how a prison education project had (if at all) changed male prisoner's reasoning and attitude, Pawson found *"there were, of course, no standard questionnaires, personality inventories or attitude scales ready-made for such a specific purpose, so one had to be invented"* (Pawson and Tilley, 1997, p. 169). This was also the case for the Forest School programme with a group of young people with SEN.

Tools for gathering information were therefore designed by the researcher to draw on data from a range of individuals involved in the programme, as outlined in Table 3.3

Table 3.3 Data gathering tools used in this study.

Target Participants	Measurement Tool	Method of Development
Young people (x4)	Narrative observations Semi-structured interviews	Piloted with FSL and Senior EP
Parents (x2)	Telephone interviews	Piloted with FSL and Senior EP
Teachers (x2)	Questionnaires	Piloted with school staff and Senior EP
Forest School Leaders (x2) Forest School TAs (x2)	Semi-structured interviews Realist Interviews Questionnaires	Piloted with other Forest School leaders Piloted with Senior EP

Efforts were made to pilot data gathering tools where possible. The researcher had access to other members of staff at Oak School who were able to pilot the questionnaires and other FSLs not involved in the case study Forest School piloted the semi-structured interview. The semi-structured interview pilot led to three refinements of the script and enabled recording tools to be checked. However, due to the aforementioned vulnerability of the pupils and parents which impacted upon gaining consent for the study, it was not deemed appropriate to approach other pupils or parents from this school for the purpose of piloting materials. Therefore piloting of scripts used for parents and pupils was conducted with professionals who knew the population well, including a Senior EP and the FSL. The data gathering process was conducted in the following timeframe (Table 3.4).

Table 3.4 Timeline of Case Study Research Activity

Date	Research Activity
6.9.12 – 13.9.12	Collating information via email about use of Forest School in the LA from others EPs
28.9.12 – 23.11.12	Meetings held at Oak School and Crow's Wood with SLT to gain initial information about the Forest School programme
7.2.13 - 11.2.13	Ethical approval received from University of Nottingham so written informed consent was sought and gained from leaders at Oak School and Crow's Wood to allow researcher access to the Forest School site
27.2.13 – 10.5.13	Parental consent and information forms developed, checked by school, sent out (x10) and received by school (x5)
24.5.13	Parental telephone interviews conducted (x2)
22.5.13 – 27.6.13	Narrative observations and programme validity checklist conducted at Crow's Wood (observational data only gathered for pupils with consent). Documents gathered from FSL (examples of risk assessment and NOCN module criteria)
26.6.13 – 27.6.13	Semi-structured interviews with pupil participants (x3)
1.7.13 – 17.7.13	Teacher (x2) and Forest School staff (TAs x2 and FSLs x2) consent gained and questionnaires distributed and collected
15.7.13 – 16.7.13	Pilot of Forest School staff semi-structured interview (x2)
17.7.13	Interview Forest School staff (x2 TAs and x2 FSLs)
8.1.14	Realist Interviews with Forest School staff (as above)
14.3.14	Final check of CMO rankings with Crow's Wood FSL
2.4.14 – 11.4.14	Feedback to participants and stakeholders

The timeline of research activity illustrates that, once ethical considerations of informed consent had been addressed, the case study commenced. The following account provides further information and justification for the data gathering tools used in this naturalistic case study (Cohen, Manion and Morrison, 2011).

3.9.3.1 Observations

The Forest School programme at Crow's Wood was observed by the researcher for four days (20 hours) in order to assess programme fidelity and support development of the second programme specification through an ethnographic understanding of the real world context of the programme (Robson, 2011). The fidelity check was necessary to ensure that the programme of study was indeed a Forest School, according to the FSA's (2013) criteria. Narrative observation of the site and discussion with FSLs confirmed that the criteria were met, for example, long-term delivery of the programme in a natural environment. Appendix 8.5 gives full account of the FSA (2013) criteria and evidence of how the Forest School programme under study met these criteria.

Case studies such as this share similarities with ethnographic research due to a focus on inductive data gathering, contextual relevance of the observations and repeated observation (Cohen, Manion and Morrison, 2011). Ethnographic studies also draw on gathering live data through the use of technical devices (ibid). Therefore, photographs were taken to contextualise the Forest School programme and to provide evidence to support the programme specification. Crow's Wood is approximately 5 miles away from Oak School, set within approximately 100-acres of natural ancient woodland, as shown in Photograph 3.1.

Photograph 3.1
Crow's Wood on 22.5.13

Narrative observations were used to capture the setting, activities, interactions and behaviour of the pupils who, alongside their parents, had given informed written consent to be observed. The observations were classed as narrative participant observations due to this association with ethnographic research which enables data to be generated through the researcher observing and listening to people in the context of the study (Gray, 2004). Although it is acknowledged that an individual researcher cannot capture every observation and may have a limited observational perspective, structured observations were rejected in this case study due to the need to be open to additional themes not identified by the RS (Flick, 2006). The observations were ethical and overt because all participants at Forest School, including the young people, were aware that the researcher was observing the programme to gain an insight into how it works.

3.9.3.2 Documentary Analysis

Drawing on elements of the programme described in documentation has supported the development of programme specifications in other REs in an educational context (Webb, 2011). Available documents were examples of activity risk assessments and qualification criteria (appendix 8.9) which the young people could demonstrate to gain an NOCN award (NOCN, 2013). The risk assessments supported the programme fidelity check (appendix 8.5), which states that a Forest School requires working policy documents (FSA, 2013). The NOCN (2013) module criteria supported an understanding of the contextual features of the Forest School programme because it clearly documents the work young people must do at Forest School in order to fulfill criteria for the qualification. As all young people on this programme were working towards the modules, this information is relevant to the whole group.

The FSLs had selected 11 modules (NOCN, 2013) which young people can achieve through attending Forest School, such as 'Using Teamwork Skills' 'Understanding Organic Horticulture' and 'Use and Maintain Woodworking Tools'. Pupils are assessed by FSLs through observations and a written portfolio (with scribe support). Elements of the documents were drawn out to support programme specification development, for example both the risk assessments and NOCN (2013) paperwork suggest that pupils use potentially dangerous tools at Forest School so this documentary evidence supports the contextual feature of 'exposure to risk of harm'. This information can support information about the context gained through observations but should not be given significant weight due to the potential for discrepancy between what the module notes say is achieved in comparison to the actual achievements of the young people.

3.9.3.3 Questionnaires

Within a RE, data gathering tools can be developed to fit the purpose of the research questions (Pawson and Tilley, 1997). Pawson (2006) suggests that quantitative data can be helpful to support the understanding of programme outcomes and as a research question in this study focuses on the outcomes of attending Forest School for the young people involved, a questionnaire was designed by the researcher (appendix 8.12). FSLs and TAs supporting Forest School were asked to complete a questionnaire for each pupil they worked with, as were teachers at Oak School who knew the pupils well.

Teachers in the school were targeted to find out about the degree to which any outcomes observed at Forest School might also be seen in the school setting.

In line with guidance from Cohen, Manion and Morrison (2007) the questionnaires were designed to give several options to explore a specific concept, ensured that the questions linked to the research questions, and were simple, accessible and brief. Pilots of the questionnaires were conducted with two adults from the education profession with some knowledge of Forest School, which led to amendments to the wording. Questionnaires about each pupil participant (n=4) were completed by both FSLs (n=2). Teachers of n=3 of the pupils completed the questionnaires and a TA additionally completed a questionnaire for n=2 of the pupils, leading to a total of n=13 completed questionnaires.

The questionnaire (appendix 8.12) was structured in order to gain specific outcome data related to information which had emerged through the RS and the case study to date (i.e. observations, parent and pupil interviews). As narrative observations had explored Forest School inductively, the questionnaires were designed to deductively 'pin down' the relevance of outcome data to each pupil. Therefore the questionnaires explicitly asked participants to rate the extent to which pupils had been affected by the Forest School experience in areas of development including confidence, motivation and emotional well-being. Participants completing the questionnaires were also asked to offer qualitative information to explain their responses further or give additional information. Although the questionnaire enabled hypotheses arising from the RS and case study so far to be tested by targeting adult participants who know the young people well, the tool is limited by a lack of pre-programme data. The retrospective nature of the questionnaire data gathering therefore impacts detrimentally on the accuracy of the findings and may be open to bias if participants were eager to promote the Forest School approach. The results therefore will be treated with caution and drawn upon only as a small part of a triangulated design.

3.9.3.4 Interviews

Interviews are essential data sources in a case study design (Yin, 2009) and two types of interviews were employed in this RE: semi structured and realist. Semi-structured interviews were used to gain information from pupils, parents and professionals involved in the Forest School programme. The Realist Interview (RI), which is

discussed in more detail later, occurred in order to check the findings of the case study with the four Forest School staff, within a scientific realist framework (Pawson, 2006). Semi-structured interviews were selected for data gathering purposes because they are targeted and insightful (Yin, 2009), allowing specific and more open questions to be asked which can support accurate programme specification development (Pawson and Tilley, 1997). Pilots were conducted in order to avoid bias which can result from poorly designed interviews and interviews were recorded where possible to ensure accurate recall. It is acknowledged that interviewees may be tempted to provide answers they believe the interviewer wants to hear (Yin, 2009). Therefore, explanatory passages were read out at the start of each interview to explain the researcher's role and the purpose of the interview, emphasising the importance of gaining the interviewee's honest view. Interview participants gave informed written consent and no deception was involved (Cohen, Manion and Morrison, 2011).

3.9.3.4.1 Telephone Interviews with Parents

Parents who gave informed written consent for their child to be involved in the case study (n=4) were asked whether they would consent to being contacted by telephone to give their perspective on the impact of Forest School on their child. Parents who gave consent for this (n=2) were then contacted by telephone due to the convenience of this approach, reduced interviewer effects and lack of reliance on literacy (Cohen, Manion and Morrison, 2011). At the beginning of the telephone interview the purpose of the conversation was explained and further verbal consent gained. The interview structure was piloted with two other adults and the transcripts can be found in appendix 8.10. Although only a very small (n=2) parental population was accessed, this anecdotal information can be used as part of a triangulated approach to refine CMOCs and support the development of an understanding of parental view which does not yet appear to have been sought for this population of young people accessing Forest School.

3.9.3.4.2 Interviews with Young People

Roe and Aspinall (2011b) avoided seeking pupil views due to the potential of inducing anxiety when an unfamiliar researcher attempts to interview extremely vulnerable young people. However, pupil views are important (Greig, Taylor and MacKay, 2013) and, if possible and appropriate, should therefore be represented in the programme specification. Indeed, young people are amongst the most critical stakeholders in this

project and *"it is increasingly accepted that children are co-constructors of meaning and do have a valid perspective worthy of inclusion in research"* (Greig, Taylor and MacKay, 2013, p. 208).

Due to varying levels of literacy ability amongst the young people, it was deemed more appropriate to conduct semi-structured interviews at Forest School rather than ask them to complete a written questionnaire, which could potentially be stress inducing and yield limited results (Nind, 2008). Three out of the four pupils who gave informed consent to be observed also gave consent to be interviewed and recorded, both in written form prior to the study and verbally at the beginning of the interview. These semi-structured interviews were conducted at Forest School on the second day of observations, so that the young people had time to become familiar with the researcher. The researcher used skills gained in prior professional practice working with vulnerable young people to engage sensitively and respectfully, with ethical considerations to the fore (BPS, 2010). These skills focused on building rapport with the young people, being non-judgemental of their views and attuned to the verbal and non-verbal communication regarding whether they are happy to continue the interview.

3.9.3.4.3 Interviews with Forest School Staff

In an RE it is crucial to target individuals who know the programme well and can comment on elements related to context, mechanisms and outcomes (Pawson and Tilley, 1997). Therefore, the four members of staff attending Forest School alongside the young people were interviewed (appendix 8.7). The semi-structured interview was designed in two parts; firstly to allow the participant to talk openly about their views of Forest School and secondly to ask them specifically about their view on outcomes which had surfaced in the literature as part of the RS. A pilot of the semi-structured interview script was conducted to ensure the questions were appropriate, non-leading and accessible. Two different FSLs working within the same LA were contacted and gave informed consent to be interviewed as part of a pilot. The semi-structured interview scripts were subsequently modified to reflect the responses of the pilot participants to the questions in appendix 8.6.

Informed written consent from the Forest School staff was sought and obtained for the purpose of refining the first programme specification by seeking their view of the

outcomes, contextual factors and hidden mechanisms at work, or the *"circumstances, actions or thoughts that relate to the acknowledged outcomes"* (Shepherd, 2011, p. 57). As four views will be probed, this gives scope for triangulation during thematic analysis of the transcripts, which will be used for *"identifying, analysing and reporting patterns (themes) within data"* (Braun and Clarke, 2006, p. 79). More detail will be provided later about data analysis and how the second programme specification was developed.

3.9.3.5 Realist Interview (RI)

RIs are open about the current programme specification by inviting participants to understand the researcher's theory and then offer their own view in order to refine the structure (Pawson and Tilley, 1997). Another aim of the RIs is to probe Forest School staff about 'unknown' elements of the programme specification, which are often the mechanism factors (Pawson, 2006). These often 'hidden' mechanisms may therefore require careful discussion and consideration to discover, if they have not been illuminated in the RS or case study. Therefore, after case study data gathering, the second programme specification (appendix 8.15) was presented to the four Forest School staff in order to offer them an opportunity to accept or reject elements of the programme specification. Rather than potentially having to guess the interviewer's aims, in RIs participants should think *"yes, I understand the general theoretical ground you are exploring, this makes your concepts clear to me, and applying them to me gives the following answer…"* (Pawson and Tilley, 1997, p.167). Participants gave written informed consent for the RI to be recorded and for their information to be used for a final refinement of the programme specification.

A plan of the RI (appendix 8.16) was presented to each participant, including information on confidentiality, the voluntary nature of participation and their right to withdraw. It is acknowledged that any interview can be at risk of bias or low reliability, so a pre-prepared plan can help to limit these effects (Cohen, Manion and Morrison, 2011). This RI was delivered as a group session which was time effective and potentially more natural than individual interviews, as the group can generate theory through natural conversation which also *"becomes a tool for reconstructing individual opinions more appropriately"* (Gray, 2004, p. 191). The RI process has two key elements: the 'teacher-learner function' and the 'conceptual refinement process' (Pawson and Tilley, 1997, p. 165), as explained diagrammatically in Fig. 3.8.

Figure 3.8 Basic Structure of the Realist Interview (Pawson and Tilley, 1997)
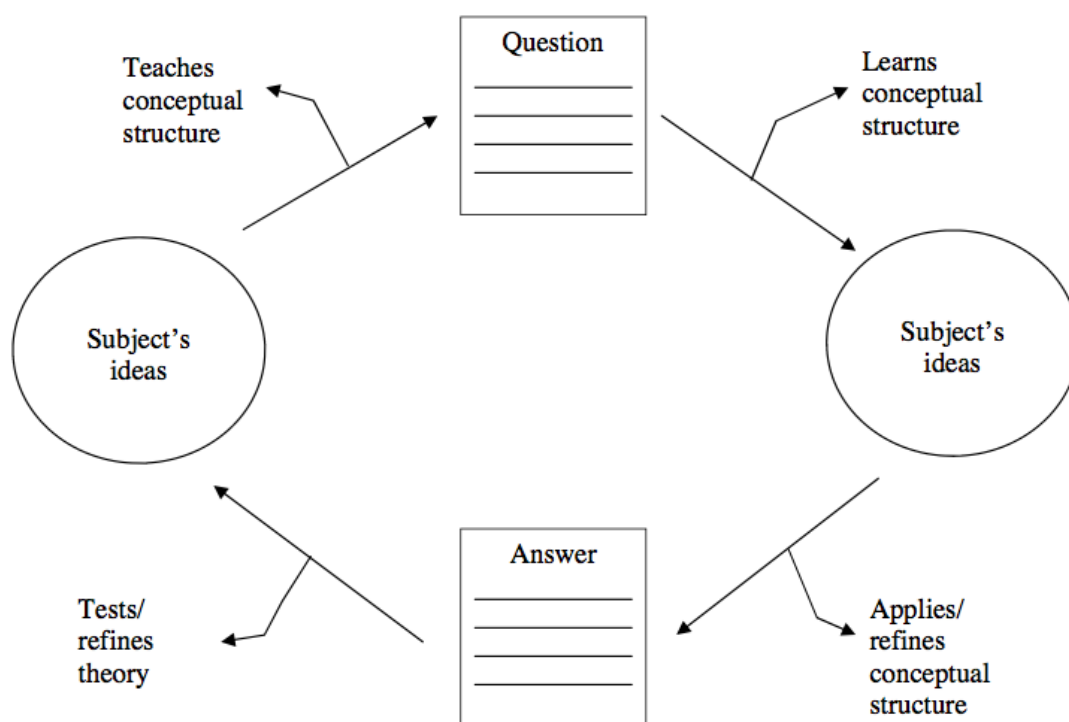
(Pawson and Tilley, 1997, p. 165)

This cyclical process enables continual refinement of the programme specification and enables participants to guide this refinement. However, the group interviews can present challenges, such as the need to be aware of the threat of extreme views due to a dominant person, particularly in such a small (n=4) group (Cohen, Manion and Morrison, 2011). Therefore, in addition to the group discussion there was also an opportunity for individual viewpoints to be gathered during the RI. Each participant was given their own copy of programme specification 2 and asked to make notes regarding any changes they felt should be made.

Social programmes are complex and likely to result in multiple CMOCs (Pawson, 2006). Therefore, in order to structure findings to be useful and accessible to other settings, a method of illuminating the most critical or important aspects to the Forest School programme was sought. Greater frequency of codes relating to CMOCs in the data does not necessarily correlate to importance (Braun and Clarke, 2006), so Forest School staff were asked to rank the CMOCs for importance to programme success. Participants were asked to rank the CMOCs during the RI because ranking has been

used successfully during other REs within educational contexts (Soni, 2010; Davies, 2011). Additionally, although ranking is not an explicit part of a RI according to Pawson and Tilley (1997) the diagram presented in Fig. 3.8 "*is not meant to imply the existence of some singular and unique technique which captures the idea*" (Pawson and Tilley, 1997, p. 169). Therefore, there is room for flexibility in terms of the conceptual refinement gained from the participants, and ranking is likely to be helpful in an applied role in order to enable other settings to focus on the most critical elements.

However helpful ranking may be practically, it also has limitations in this scenario where a large amount of data was gathered. Thornbery (2012) found that many practitioners were overwhelmed by the presentation of the programme configurations, and the researcher in this study had similar concerns. Therefore, rather than asking participants to rank the full data set, the data was divided into sections to ensure that it was ranked in its entirety by at least two participants. Although this technique limits the accuracy of the rankings, it enables a mean average score to be developed and is respectful of participant time and goodwill (BPS, 2010). In order to address this limitation in ranking accuracy, the final programme specification was sent to one of the participants for a final member check in order to improve the accuracy and validity of findings (Yanow and Schwartz-Shea, 2006). This member check led to one amendment regarding the importance of providing drinks to the young people, which increased from a rank of 'partially important' to 'ideal' for programme success.

3.10 Ethical Considerations

The guidelines set out by the BPS (2010) state that research should show respect for the dignity and autonomy of participants, have scientific value and social responsibility and aim to maximise benefit and minimise harm for those involved. This study was not considered to present risk of harm as the pupils involved were already accessing Forest School as part of their educational provision.

3.10.1 Consent

Informed written consent was gained from every individual involved in the study (BPS, 2010), including young people, parents, FSLs, TAs, teachers and members of the SLT who gave consent for the researcher to have access to the research site (appendix 8.4). As the young people attending Forest School are under 16 years old, informed written

consent was sought from their parents or professionals with parental responsibility. Parents were asked to seek their child's written consent for involvement in the study through discussion. Parents were also asked to give written informed consent for their child's teacher, FSL and TA to be approached to complete a questionnaire about their child and to allow the researcher to take photographs of the young people at Forest School, solely for the purposes of this evaluation. Written informed consent was gained to observe n=4 young people and to interview (and record) n=3 of them.

Teachers, TAs and FSLs gave written informed consent for participation in the interviews and/or completion of a questionnaire. These participants were shown the parental consent forms which explicitly gave permission for professionals to give information about the young people. Information sheets accompanying all consent forms outlined the purpose of the study in detail, and all participants were given researcher and supervisor contact details to obtain further information, although none made contact. The right to withdraw data and participation at any time was made explicit.

3.10.2 Confidentiality
Pupil data will be stored in a locked cabinet and all information will be anonymous and kept in accordance with the standards outlined by BERA (2004). The researcher will remind anyone asking for confidential information that they are bound by the BPS (2010) ethical guidelines on confidentiality and data security.

3.10.3 Feedback
After the results of the study were analysed, pupil participants were thanked for their involvement and given child-friendly information about the findings. A summary report was made available to parents of the four target pupils, Oak School, Crow's Wood and the EPS.

3.11 Data Analysis

The aim of the study is to ensure that a sufficient amount of data is collected to provide accurate and thorough evidence from multiple sources to inform a final programme specification. Although the small case study design makes generalisation of outcome findings difficult, the findings can be used by other settings to inform the development of their Forest School programmes, indeed *"strong realist evaluations are thus intended to lead to better-focused and more effective programmes"* (Pawson, 2006, p.15).

Thematic analysis has been selected for data analysis of the case study data (semi-structured interviews, observations, questionnaires) because it is a flexible tool which can be *"conducted within both realist/essentialist and constructionist paradigms, although the outcome and focus will be different for each"* (Braun and Clarke, 2006, p. 85). Although the evaluation was searching for themes which had already emerged in the RS to gain an understanding of the extent to which previous knowledge of Forest School applied to the group in question, the researcher was also open to the development of new codes and CMOCs. Thematic analysis of the data was therefore selected due to its ability to develop themes both inductively and deductively (Fereday, 2006).

Thematic analysis has been used in other REs (Webb, 2011) to support the accurate development of CMOCs and involves re-reading the transcripts to search for repeating ideas in order to code the participant's responses and develop themes (Fereday, 2006). Interview data was first transcribed in order to give an opportunity for the researcher to become familiar with the data set and to support the coding process (Braun and Clarke, 2006). Inter-rater reliability checks were used to ensure the audio to paper transcription was accurate. Table 3.5 presents the stages of thematic analysis used in data analysis of this RE, from Braun and Clarke (2006).

Table 3.5 Phases of Thematic Analysis (Braun and Clarke, 2006)

Phase	Description of process
1.Familiarising yourself with the data	Transcribing data, reading and re-reading the data, noting down initial ideas.
2. Generating initial codes	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes	Checking if the themes work in relation to the coded extracts (level 1) and the entire data set (level 2), generating a thematic 'map' of the analysis (appendix 8.13).
5. Defining and naming themes	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme (appendix 8.14).
6. Producing the report	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Therefore, once transcribed, a list of initial codes were developed which appeared to represent key ideas from the data. These were then considered further and grouped into broader themes, defined as *"an implicit topic that organizes a group of repeating ideas"* (Auerbach and Silverstein, 2003, p. 37). Two inter-raters also training on the DAEP course mapped codes onto themes to ensure that themes were mutually exclusive. This process led to the theme of 'Independence' being subsumed into 'Knowledge and Understanding'; the merging of 'Behaviour' and 'Emotional well-being' and transference of 'Enhancing Aspects' into the 'Enabling Aspects' theme.

Once thematic analysis of all data occurred, the results were compared with the first programme specification, developed during the RS. Codes and themes were then assimilated with programme specification 1 (appendix 8.2) to develop programme specification 2 (appendix 8.15). This meant deleting, adding or amending the initial CMOCs and was an iterative process of refinement. It is acknowledged that this process is subjective depending on the researcher's thinking about whether codes correspond to C, Ms or Os. However, experience of this process during the RS and a clear idea of what constitutes a C, M or O from reading (Pawson and Tilley, 1997; Pawson, 2006) provided some expertise in this area. Also, colleagues in the West Midlands LA who had previously used RE and my University research supervisor were asked to check elements of this process and act as 'critical friends'.

3.12 Examples of the Data Analysis Procedure

Auerbach and Silverstein (2003) suggest that it is inevitable that different researchers may interpret interview data differently, but the interpretation is only valid if supported by data extracts. It is critical to be able to demonstrate how the codes, themes and CMOCs have been developed from the data (Auerbach and Silverstein, 2003). Therefore, the system adopted for this evaluation means that each C, M or O code links explicitly to evidence from the data or literature. Data extracts in the following examples and also in chapter 4 have been selected when they are coherent and concise and are considered to illustrate a code and/or theme effectively (Braun and Clarke, 2006). Therefore, the following extracts are presented alongside their theme and code, as well as whether the extract supports a context, mechanism or outcome factor.

3.12.1 Interview extract

This extract was taken from the semi-structured interview of a FSL. It can be found within the theme of **confidence** because it highlights how young people having choice about the activities they do can support them to be successful and confident to go on to try new things.

Table 3.6 Interview Extract.

Extract	Code	Participant Data Code	Context, Mechanism Outcome?	CMO Code
"you go with the flow, if one of the students, one of the kids has got something they're interested in and you've got something else in your head you go with what they've got in their head and work with that as if you've got them hooked on something then they're more likely to gain the confidence to go on and try something different"	Children engage in child-led learning and choose from a diverse range of novel activities on offer set up by qualified FSL. Children are engaged and know they can follow their own interests and initiate their own plan and learning. Children succeed and are more likely to be confident to approach potentially challenging tasks in the future.	Interview A (appendix 8.7)	Context Mechanism Outcome	1d

3.12.2 Questionnaire extract

This extract was taken from a questionnaire completed by the school teacher of pupil 2. The extract supports the development of CMOCs within the themes of **language and communication (3b)** and **new perspectives in adult/child relationships (7c).**

Table 3.7 Questionnaire Extract

Extract	Code	Participant/ Data Code	Context, Mechanism Outcome?	CMO Code
"When I visited pupil 2 at Crow's Wood he was very keen to show me his achievements and explain to me some of the things he had learned about animal tracks etc. He freely initiated these conversations (something he had been reluctant to do in the past)".	Provides multisensory experience/real context for new vocabulary. There are opportunities to assess children in a different way. They are motivated to discuss the multi-sensory experiences at Forest School. Child becomes more confident at communicating.	J2 (appendix 8.12)	Context Mechanism Outcome	3b 7c 3b 3b

3.12.3 Observation extract

The following extract comes from a narrative observation of a FSL and pupil. This extract informed the theme of **Knowledge, Understanding of the World and Independence.** The extract illustrated the contextual factor of opportunities for curriculum links in the environment.

Table 3.8 Observation Extract

Extract	Code	Participant/ Data Code	Context, Mechanism Outcome?	CMO Code
Planting – pupil putting bean canes in. FSL - "talk me through what you're doing, then". Pupil – "putting canes in ready". FSL – "right, you'll need 8 evenly spaced. The thick end goes in the ground. They need to be strong enough if it's windy. How many corners on a square?" Pupil – "4". FSL – "good, treat it as a square and put the left over canes between the corners. That's it. So where are the canes in relation to each other?" Pupil – "opposite?" FSL – " yep, and these?" Pupil – "diagonal".	Exposure to curriculum areas of maths, science, music, literacy and language in real-life context	Ep.3 and 4 (appendix 8.8)	Context	6d

3.12.4 Documentary extract

As aforementioned, available documents included risk assessments and NOCN (2013) assessment criteria for modules young people could achieve by attending Forest School. As every young person involved in the study achieved the module titled 'Developing Group and Teamwork Communication Skills', this paperwork was used as a method of triangulating the data. This extract links to a code within the theme of **social skills.**

Table 3.9 Document Extract

Extract	Code	Participant/ Data Code	Context, Mechanism or Outcome?	CMO Code
Identify a number of situations when co-operation is necessary to achieve a group task.	Children's listening skills improve and demonstrate more pro-social, helpful behaviour.	F2 (appendix 8.9)	Outcome	2b

These extracts from the various data sources were presented to illustrate how the raw data has been used to develop codes, which make up the CMOCs. Clearly, some extracts will include information which relates to all three CMO features, whereas others may only illuminate one. Pawson (2006) proposes that information can be drawn from different sources to build CMOCs. For example, a single CMOC may have draw on information from observations to form the context factor, interviews to form the mechanism factor and questionnaires to form the outcome factor. The data codes included in the programme specifications (appendix 8.2; 8.15; 8.19) enable data sources to be traced so that CMOC development is transparent and replicable.

3.13 Validity and Reliability

Pawson (2006) acknowledges that being "*both partisan and researcher is like having one's cake and eating it*" (p.6). Therefore, care was taken to ensure the highest levels of validity in research, including awareness of researcher objectivity, potential bias and taking steps to involve inter-rater reliability at every opportunity. As already discussed, views of all parties involved in the Forest School programme were sought to offer a balanced, triangulated view.

An initial treatment fidelity checklist was completed through observation, document analysis and discussion with key stakeholders before the research commenced, in order to ascertain that the intervention evaluated was 'Forest School', as described by programme criteria (FSA, 2013). In order to enhance reliability, CMOCs were developed carefully over time and checked with the four key participants during a RI and finally through a member check with a FSL. Other potential relevant threats to validity in this study are summarised in Table 3.10, including steps taken by the researcher to overcome the threat, as adapted from Robson (2011).

Table 3.10 Threats to Internal Validity (Robson, 2011)

Threats to Internal Validity	Discussion
History	Through contact with professionals around the young people, the researcher was aware of events in the young people's lives which might effect pupil interaction with the programme, and can account for these appropriately.
Testing	Bias in testing has been addressed through triangulation, piloting transcripts, gaining inter-relater reliability with transcript checks and using critical friends to check coding and the process of translation of codes into C, Ms or Os. The RI gave Forest School staff an opportunity to comment on the programme specification in addition to individually ranking the data. The ranking data was also given a final check by a FSL.
Instrumentation	Clear narrative frameworks were used for measuring observable behaviour. Questionnaire measures and interview scripts were piloted where possible and checked with 'critical friends'.
Maturation	Staff and parents who know the young people well were targeted for outcome data, so these people are best placed to comment on whether any changes are due to Forest School or maturation. The researcher acknowledges limited control over maturation effects on outcomes, so context and mechanism factors are given equal weight in order to meet the evaluation aims of developing a programme specification about how Forest School works.
Selection	Staff at Oak School decide who is invited to the Forest School programme and then young people decide whether they want to attend before the programme and then by remaining on the programme. Pupils on the programme are partially representative school population as they all have a statement of SEN.
Ambiguity about causal direction	How change occurs will be carefully constructed through the methodology of realistic evaluation and generative causation. A clear data trail will be documented so the evidence base is traceable and replicable.

3.14 Reflections on the Method and Limitations to the Design

It is acknowledged that this study lacks a control group or an opportunity for pre-programme assessment. Therefore, establishing linear causality is not possible. However, the RE framework views causation as generative (Pawson, 2006) which proposes that the final programme specification (appendix 8.19) is a product of iterative data gathering and synthesis which presents an account of the interaction between features of the context, the mechanisms of change and specific outcomes gained for this particular case study group of young people (Pawson and Tilley, 1997).

The methodology used is explicitly designed to offer answers to the research questions focused around *"why a program works, for whom and in what circumstances"* (Pawson and Tilley, 1997, p. xvi) and also includes outcome data which was a key area of interest for stakeholders at Oak School and Crow's Wood. RS and RE require a cycle of research which is continuously being refined by new information gained. It is an approach embedded in the understanding of people involved in programmes, yet strives for a shared truth and meaning which, in this case, might be used to support development of the programme in other contexts (Pawson, 2006).

The design is limited by relying on one researcher's view of the programme and because a single researcher is responsible for extracting data relevant to context, mechanism and outcome configurations to define the process. However, the RI acted as a barrier to researcher bias because the people who know the programme best were asked to comment on the specification. Although some may consider case studies to be less robust than other methodologies, (Aslam, Georgiev, Mehta and Kumar, 2012), steps have been taken to ensure a satisfactory level of rigour in the development of measures and results within this study. Further detail and reflection on this evaluation's limitations are presented in chapter 5.

Chapter 4. Results

4.1 Introduction

The third and final programme specification is presented in this chapter and is organised into eleven themes which have emerged from a Realist Synthesis (RS) of existing Forest School research and a Realistic Evaluation (RE) of a Forest School involving a small group of young people with Special Educational Needs (SEN). The evaluation was designed to address the research questions in Fig. 4.1.

Figure 4.1 Realistic Evaluation Research Questions

1. What are the important context, mechanism and outcome configurations of Forest School with young people aged 14-16 who have SEN?

    1.1 What are the features of the Forest School context which set up mechanisms of change?

    1.2 What are the mechanisms which enable outcomes to occur for the young people?

    1.3 What are the outcomes for 14-16 year olds with special educational needs who attend Forest School?

    1.4 What are the most critical context, mechanism and outcome configurations, according to key stakeholders?

This evaluation drew upon data from a wide variety of sources in order to triangulate information within a case study RE (Pawson and Tilley, 1997). In order to demonstrate how the data gathered supported programme specification development, codes have been assigned to each source to ensure traceability of evidence and a systematic approach. Table 4.1 presents the codes used.

Table 4.1 Data Coding System

Code	Source	Appendix
A, B, C, D	Semi-structured interviews with two Forest School Leaders (A&B) and two Teaching Assistants (C&D)	8.7
E	Narrative observation of pupils 1,2,3,4*	8.8
F	Documentary evidence	8.9
G	Parent telephone interviews (parents of pupils 1 and 4)	8.10
H	Pupil semi-structured interviews (pupils 1,2,4)	8.11
I	Forest School staff questionnaires (focused on pupils 1,2,3,4)	8.12
J	Teacher questionnaires (focused on pupils 2,3,4)	8.12
K	Realist Interviews with participants A, B, C, D.	8.17

Each programme specification (see appendices 8.2; 8.13; 8.19) sets out the context + mechanism = outcome configurations (CMOCs) alongside the data source, with separate columns used for sources from the literature (RS) and from the case study (RE). To illustrate this, Table 4.2 has been inserted below, taken directly from programme specification 3 (appendix 8.19). This CMOC extract is from the theme of 'confidence' and demonstrates that the CMOC was identified initially in the RS from three sources (O'Brien and Murray, 2005; Massey, 2004; and Borradaile, 2006) and was supported by case study data from codes in participant C's interview (appendix 8.7), observation data (appendix 8.8), the telephone interview with a parent of pupil 4 (G4 - appendix 8.10) and the teacher questionnaire for pupil 3 (J3 - appendix 8.12). Further examples of how data was used to develop CMOCs are provided in chapter 3.12.

Table 4.2 An example of a CMOC to explain the data sources.

Context	Mechanism	Outcome	Source	Data
Among natural resources in a woodland setting where adults model what children can make.	Child knows that creation is achievable (they have the materials and adults can help them).	Young person achieves at something new and receives positive feedback about their achievements which make them more likely to attempt other projects independently in future. A culture of enterprise develops.	O'Brien and Murray (2005) Massey (2004) Borradaile (2006)	C Ep.9 G4 J3

This process of documenting the sources of evidence used to formulate the programme specification was designed to enable another researcher to trace the findings of this study for the purpose of replication or validation of findings.

4.2 Describing the Themes Identified

During the RS, ten overarching themes emerged, nine which were related to outcomes for children and another considering negative mechanisms, or factors hindering programme success (Pawson and Tilley, 2004). Eight of these outcome themes were explicitly presented in an action research project spanning three UK counties (O'Brien and Murray, 2005; 2006; 2007) and were therefore used to structure part of the deductive data gathering in the RE. For example, the script used in the semi-structured interviews with FSLs and TAs (appendix 8.7) explicitly probes these eight outcome themes highlighted in O'Brien and Murray (2005; 2006; 2007). Of the eleven final themes identified through the RE, nine relate to outcomes and two further themes are

concerned with aspects of the Forest School thought to enable or hinder programme success. A brief description of each theme is presented below in Table 4.4.

Table 4.3 Summary of themes identified by the study.

Theme	Description
	(adapted from O'Brien and Murray, 2005)
1. Confidence	The self-confidence and self-belief that comes from children experiencing freedom, time and space to learn, grow and demonstrate independence.
2. Social Skills	An increased awareness of the consequences of their actions on others and the ability to successfully co-operate with peers through sharing tools and tasks and play.
3. Language & Communication	The development of more sophisticated written and spoken language, promoted by visual and sensory experiences. These experiences stimulate natural conversation, even for children who may find verbal interaction difficult.
4. Motivation & Concentration	Characterised by keenness to participate in the activities on offer and to focus on tasks for an extended period of time. A positive attitude towards Forest School is displayed.
5. Physical Skills	The development of physical stamina and gross motor skills through moving around the Forest School site for extended time. Also the development of fine motor skills due to the need to safely manipulate tools and create art in the environment.
6. Knowledge, Understanding of the World and Independence	A respect, interest and understanding of the natural environment is developed due to observation and teaching about flora and fauna, for example. This knowledge can also be transferred to more academic tasks.
7. New Perspectives in adult/child Relationships	Forest School practitioners can develop positive relationships with the young people due to the understanding gained from observing and interacting with them in a different setting, due in part to the need for all to cope with the challenges of the environment.
8. Ripple Effects	Children and young people are motivated to spend more time in natural environments out of the school day, which can mean that parents and siblings spend more time in woodlands.
9. Emotional Well-being and Behaviour	Young people understand the boundaries clearly due to the need to be safe. They develop positive and respectful relationships with staff which can promote well-being and appropriate behaviour.
10. Enabling Aspects	Aspects are presented which are thought to support the programme, for example stakeholder investment and communication between settings (school and Forest School).
11. Hindering Aspects	Aspects are presented which are thought to hinder the programme success, for example individual pupil need and financial restraints.

The themes above evolved throughout the RE. For example, during thematic analysis of the qualitative data gathered, the development of 'independence' emerged as a separate

theme. However, during inter-rater reliability (appendix 8.14) to ensure that codes exclusively mapped to particular themes, the theme of independence was merged with knowledge and understanding. Similarly, themes of 'enabling' and 'enhancing' aspects to Forest School were also merged for mutual exclusivity during this process.

4.3 Final Programme Specification Context + Mechanism = Outcome Configurations (CMOCs)

CMOCs are presented by themes in the following account, which describe in detail how the Forest School programme works, according to a RE framework (Pawson and Tilley, 1997). As described in chapter 3, CMOCs have been carefully considered and refined through synthesis of the existing literature and triangulated case study data gathering. CMOCs were ranked in order of importance by Forest School staff to determine the most important features for programme success, in order for the findings to be useful to other settings (appendix 8.18). Table 4.4 presents a colour-coded key to represent the rank given to each CMOC by participants A, B, C and D during the RI.

Table 4.4 Key to present the importance of CMOCs to programme success.

1	Critical
2	Ideal
3	Partially important
4	Not important

The colour-coded system adopted to indicate the level of importance given to each CMOC is consistent throughout the following account and the final programme specification (appendix 8.19). Features relating to C, M and Os in the following account are ordered in terms of importance and the first C feature relates to the first M and first O, and so on. The full final programme specification with links to sources of evidence is included in the appendix rather than here due to the need to maintain clarity and succinctness in reporting findings.

4.3.1 Confidence

Information gained through the RS and case study data gathering suggests that the following features of Forest School support the development of confidence within young people accessing the programme.

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In order to support the development of confidence of young people in the programme, features of the *context* include:
- natural resources in a woodland setting where adults model what children can make
- risk of harm in the environment and adults who don't interfere too early to help
- the environment is physically away from the school
- a high adult to child ratio
- young people have some say in the Forest School rules
- adults endeavour to develop and maintain positive relationships
- sessions are regular and frequent, lasting throughout the school year
- children are taught routines for safe behaviour in the woodland
- activities are child led with a high level of choice
- adults also engage in activities and naturally make mistakes

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which leads to the following *mechanisms:*
- children know that creation is achievable
- children must independently consider risks of the environment
- children know different rules apply, allowing a permissive risk taking ethos
- children learn from adult helpers and need less help next time
- young people understand the rules and understand why rules are in place
- children begin to trust the adults
- children have time and space to become familiar in the woodland environment
- routines become embedded and provide a framework for safe exploration
- children know they can follow their own interests and initiate play and learning
- children learn that it is acceptable to make mistakes and are not told off

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which can produce the following *outcomes* for young people*:*
- young people achieve at something new and are more likely to attempt projects in the future, a culture of enterprise develops as children receive praise
- children are more willing and able to take appropriate risks in learning and life
- increased confidence in own ability and independence
- young people become more independent and think for themselves
- adults are able to build positive self-esteem in children
- children are successful and develop a greater self belief in their own capabilities
- safe exploration enables confidence to build through self-discovery
- children succeed and are more confident to approach challenging tasks in future
- children are more confident because they think they can't fail

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The theme of confidence exclusively included elements which were considered critical and ideal to Forest School, suggesting that it is integral to the programme. Questionnaire data (appendix 8.12) suggested that 8% of young people in this case study showed a marked improvement in their confidence to engage with new tasks and

85% showed a slight improvement since starting Forest School. Pupils and parents also considered the development of confidence to be part of the Forest School programme, as noted by Pupil 1 who said, *"I think I've got a bit more confident"* (Pupil 1). Pupil 1's father also said *"Pupil 1 has become more confident because he's got an idea of how to do things in the outdoors"* (G1).

A feature of the Forest School context is that adults model creative activities so that children see they have the resources and support to complete the activities which, in turn, enables them to attempt something new. An adult modelling creative activities is pictured in photograph 4.1 below.

Photograph 4.1 An adult modelling activities at Forest School.

A gain in confidence due to Forest School was an embedded theme across the evidence in the literature and also in the data gathered in this case study. The following quote from FSL 'A' highlights how confidence is seen as a significant feature of Forest School and is supported by the child-led nature of the activities:

"it's to promote, as far as I'm concerned, confidence and self-esteem. You go with the flow, if one of the students, one of the kids has got something they're interested in and you've got something else in your head you go with what they've got in their head and work with that as if you've got them hooked on something then they're more likely to gain the confidence to go on and try something different" (Participant A)

4.3.2 Social Skills

The development of positive peer relationships was also an important theme within the data, as again illustrated below by the critical and ideal CMOCs reflected in the Forest School staff ranking.

In order to support the development of the social skills of the young people in the programme, features of the *context* include:

- children have free choice in the environment
- children are given freedom to play independently of adult intervention
- children are encouraged to work together on tasks requiring more than one
- tools, tasks and resources need to be shared
- the environment presents risks of harm
- the environment presents opportunities for teamwork
- children see the physical consequences of their actions
- children have their basic needs met
- children have choice to play/work with different peer groups

which leads to conditions of the following *mechanisms:*

- children do not feel inhibited by rules and expectations
- children become more accustomed to working with peers instead of adults
- children appreciate the need to listen and realise more can be achieved in a group
- children need to negotiate, share and work on tasks together
- children become more aware of the risks to themselves and others
- children see the result of their joint creations
- children become more aware of the consequences of their actions
- children are not preoccupied with meeting their basic needs
- children work with different pupils and see the strengths of other children

which can produce the following *outcomes* for young people*:*

- shy children engage and communicate with others more regularly
- children negotiate effectively with each other and are aware of each other's space
- children's listening skills improve and develop more pro-social behaviour
- children relate more positively to members of the peer group and share resources
- children become more aware of others and help them avoid danger so peer relationships become more trusting
- teamwork becomes more natural and children will seek each other out
- children take more time to consider the consequences of their actions
- children can focus on social development and personal growth
- the social hierarchy changes and new friendships are formed

Young people on the programme attended Forest School with the same group of peers for one year (Year 10 pupil) and two years (Year 11 pupils). Although not all of them came into the programme as friends, the shared experience of Forest School seemed to develop friendships, as expressed by two of the young people on the programme; *"(I like) being here with friends"* (Pupil 1) and *"you can have a laugh with your mates"* (Pupil 4).

The teacher of Pupil 3 also noted *"Pupil 3 has more solid friendships with peers who attend Forest School"* (J3), and a TA attending Forest School highlighted:

"Pupil 4 is a different pupil at Forest School. He gets on with all the peers in the group unlike in a class setting, they work as a team and the dynamics of the group are different". (I4)

The following photograph captures a moment when pupils are working together to achieve a group task. One pupil is holding the wood while another prepares to hammer a nail into it.

Photograph 4.2 Pupils working together to achieve a shared goal.

Although not ranked as a critical element, FSLs and TAs commented on the friendships which had developed between pupils and changes to the social hierarchy which occurred when pupils were at Forest School. For example:

"the class dynamics have changed. You've got the 'top dog' and the sort of lower person who gets picked on, but it's totally changed at Crow's Wood" (Participant C).

Young people viewing each other as more capable seemed to promote the development of positive, trusting relationships.

4.3.3 Language and Communication

Development of language and communication skills was highlighted in the Forest School literature, particularly for younger children. Case study data suggested that very quiet young people became more able to speak fluently in the Forest School environment and felt more comfortable to discuss issues which were concerning them. The following CMOCs emerged in relation to language and communication.

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In order to support the language and communication of the young people in the programme, features of the *context* include:

- less structure provides regular opportunities and time for natural, spontaneous talk
- the environment provides multi-sensory experiences, unpredictable situations and a real context for new vocabulary
- there is a culture of free speech and no pressure to give a 'correct' answer
- high ratios of adults to children
- opportunities for regular teamwork over the year
- no set structure to the day provides time for conversations
- positive and trusting relationships develop between adults and children

which creates conditions for the following *mechanisms* to operate:

- children need to communicate their ideas during group activities
- children are motivated to discuss the multi-sensory experiences including use of new vocabulary
- children are not laughed at if they give an 'incorrect' answer
- adults extend child speech through narrating, asking questions and providing environment-specific vocabulary
- children feel socially connected and accepted within the peer group
- children don't feel pressured to finish sentences or give answers quickly
- children are comfortable with the adults so will discuss issues or ask questions

which produces the following *outcomes* for young people:

- children become better at cooperation as they negotiate verbally with others
- children become more confident in communicating and talk about Forest School in other contexts. They use more eye contact and questions become more specific
- children are more relaxed and speak more freely because verbal frustration reduces
- children's spoken sentences are extended and vocabulary is enhanced
- friendship develops and more frequent speech and conversation occurs
- speech becomes more fluent
- young people learn because they can ask what they want to know and learn without realising. Shy children communicate more

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Any changes to language and communication skills were not explicitly mentioned in the pupil or parent interviews, but Forest School staff noted changes for particular children, which was illustrated in the following quote from Participant D:

"We've got one particular lad who, for many years here just didn't speak, and it's his second year there (Crow's Wood) now and he actually does converse, albeit odd words or a couple of words but he does and he's very relaxed and does have a laugh and a joke"   (Participant D).

Participant C recognised the importance of a relationship to communication: *"Pupil 3 tends to shrug her shoulders a lot and doesn't speak very much in the class setting. In the Forest School setting she sits quietly and observes and once a relationship is formed with the adults she will communicate"* (J3)

Questionnaires from teachers and Forest School staff reflected the idea that language skills developed markedly for 15% of pupils, slightly for 62% and no change for 23% (appendix 8.12). The environment also appeared key to providing new vocabulary for the young people involved, as was noted during an observation where the young people discussed what mealworms looked like *"mealworms have black on them"* (E p. 3) and during a pupil interview when Pupil 1 recalled the name of a tool for chopping *"oh the throw, there we go"* (Pupil 1). The importance of trust between pupils and staff is crucial for the development of communication and is explored further in theme 'new perspectives in adult/child relationships' (4.3.7) below.

4.3.4 Motivation and Concentration

Adults noticed that children were able to persevere at tasks for longer than they would in school due in part to the practical and child-led nature of tasks. The following CMOCs attempt to explain changes in motivation and concentration at Forest School.

In order to support the motivation and concentration of the young people in the programme, features of the *context* include:
• opportunities to show responsibility through safe handling of dangerous tools
• learning opportunities are meaningful and child-initiated
• activities may have a large or small group element
• children are out in all weathers on a regular basis
• there are few time constraints at Forest School
which creates the conditions for the following *mechanisms* to operate*:*
• children are motivated to act responsibly to keep themselves and other safe
• children know they can structure their own activities and be creative and explorative
• children have opportunities for leadership
• children come to feel safe in the environment and take steps to look after themselves
• children don't feel pressured to finish activities and move to something else
which produces the following *outcomes* for young people*:*
• children are motivated to be responsible and keep themselves and others safe
• children persevere for longer on projects and are keen to attend Forest School, they share their success and are more imaginative and eager to explore
• leadership increases motivation to take part
• children feel comfortable to engage with the Forest School environment and weather is not a barrier
• young people can become immersed in activities and are intrinsically motivated

Young people at Forest School have regular opportunities to show responsibility and to be trusted with potentially dangerous tools or tasks, for example a young man can be seen below moving wood to maintain a recently-lit fire.

Photograph 4.3 A pupil puts his hands close to the fire to arrange the wood.

As Forest School staff must carry out risk assessments, the pupil in photograph 4.3 would only be allowed to do this after being shown how to safely light and manage a fire and then having demonstrated the ability to listen and follow instructions, a key part of the National Open College Network assessment criteria (NOCN, 2013). Another pupil commented on the importance of listening at Forest School as a way of gaining access to motivating activities: *"if you don't listen you can't use the knives"* (Pupil 4).

Forest School staff also noted the impact on pupil motivation and suggested that the child-led element is crucial to this:

"I've had students come in and say right let's get coppicing let's do this, and they'll sit there and before you get to the end of the day they've practically made a chair because they want to do it and they're allowed to do it their way, their style and in the order they want to do it" (Participant A).

4.3.5 Physical Skills

Forest School develops practical skills so children are engaged in a constant level of physical activity (Lovell, 2009a; 2009b). The impact on physical skills was targeted during semi-structured interviews with Forest School staff.

In order to support development of physical skills of the young people in the programme, features of the *context* include:
- challenges to be overcome, such as rough terrain   - continual use of physical skills in the Forest School environment   - the requirement to handle and manipulate tools and natural resources
which creates conditions for the following *mechanisms* to operate:
- gross motor control is required to work within the environment   - children are exercising continually, building their strength and receiving physical feedback   - fine motor skills and coordination are needed when undertaking tasks
which produces the following *outcomes* for young people:
- increased gross motor control and stamina   - acquisition of physical skills (strength and balance) and become fitter, showing awareness of the space around them   - improvements to fine motor stamina, control and hand-eye coordination

Forest School staff noted the development of young people's physical skills:

"they get a bit physically stronger some of them as well 'cus they have to push wheelbarrows and bring their own tools around, they have to go and coppice and cut their own materials and drag it around"   (Participant A).

Fitness was also thought to be developed: *"from having your some sort of overweight kids here, instead of being sat in a classroom behind a desk for 40 minutes for 3 hours a day, whatever they do, they're out here, active"*   (Participant B).

During an observation I saw two young people (including Pupil 2) dismantling a shelter they had made (photograph 4.4). This required physical strength to pull apart the structure, move it around and break it up.

Photograph 4.4 Pupils dismantling a shelter
the group had made earlier in the year.

4.3.6 Knowledge, Understanding of the World and Independence

Developing knowledge about the outdoor world and practical skills was an important element of the Forest School programme for the pupils involved, and commented on by the majority of participants in the evaluation.

In order to support young people's knowledge, understanding of the world and independence, features of the Forest School *context* include:

- opportunities for discussing issues affecting the lives of the young people
- children are exposed to natural processes and features of a wild outdoor space
- learning is predominately child-initiated
- children have time and space to consider problems
- young people are exposed to changes in a natural environment over time
- skills and knowledge gained at Forest School can be applied to other settings
- skilled adults show children how to complete tasks when they are interested
- practical skill development is made explicit by adults and is more observable
- exposure to curriculum areas in a real-life context
- children have opportunities to create in the natural environment
- young people use tools which they may not usually have access to

which creates the conditions for the following *mechanisms* to operate*:*

- young people feel comfortable to raise issues which they are considering
- children engage with the world around them and become more aware over time
- children are eager to discover for themselves and are intrinsically motivated to learn
- children know they don't have to given an immediate response and aren't rushed to tidy away
- children note changes and may purposefully watching something grow
- children learn to link up experiences and knowledge in other contexts
- children see skills as useful and learn the importance of listening
- young people see Forest School as primarily for gaining practical skills
- learning is real so abstract concepts become more concrete
- children want to express themselves and have a go without fear of failure
- young people are motivated to use the tools

which produces the following *outcomes* for young people*:*

- young people learn and develop independence from having questions answered
- knowledge is gained about flora and fauna and children want to take care of the wood and other environments, such as their gardens
- children learn about the natural environment and develop skills, they want to share their knowledge with their parents or carers
- children take more time over problem solving and are more likely to be successful
- children's observational skills and awareness of the world improves
- skills, knowledge and understanding are transferred to other contexts
- children learn skills to a level of maintenance and listening skills improve
- young people focus on developing practical skills, which dominates their Forest School experience
- children retain knowledge and develop a healthy attitude towards learning
- creative thinking is enhanced
- safe use of tools and skills acquired which can be used in other contexts

The pupils at Forest School appeared to focus on the development of practical skills gained through the programme during semi-structured interviews, for example Pupil 2 identified he had learnt *"how to use a knife, stuff like that"* (Pupil 2). Pupil's practical skills were also observed at Forest School, for example when the pupils worked together and used powertools to make a wooden pig in less than 30 minutes (photograph 4.5).

Photograph 4.5 A wooden pig made
by pupil 4 and two others.

Participant C identified that pupils gained practical skills because of the passion and ability of the Forest School Leaders (FSLs) to demonstrate and teach these skills. When asked about skills of an effective FSL, Participant C said:

"they've got to have all those skills Participant A and B have got…bushcraft, their health and safety stuff, their fire making, their woodcarving and all that sort of stuff, electric tools. They seem to do it as a hobby as well and they've got lots of um, y'know, stories to tell to relate to. I mean Participant A went off on a course and they're eating road kill – I mean, our kids thought that was fascinating. They enjoy it don't they, you know they live, breathe and eat Forest Schools and I think that rubs off on the children"

(Participant C)

The skills of the FSLs enabled children to use tools safely and to create pieces of work which may not have been possible in a school because of the requirement for space and natural resources. An example of this could be the chairs in photograph 4.6 below, which were individually made by the pupils and used throughout their time at Forest School.

Photograph 4.6 Wooden chairs made by the pupils.

Although the practical experiences at Forest School dominated the thinking of the young people when they talked about the programme (appendix 8.11), adults noticed that the positive relationships and more relaxed timetable enabled children to discuss and therefore learn about issues affecting their lives. For example, Participant B noticed:

"knowledge and understanding is another big thing, whether it's life skills or maths, English, history, anything, their knowledge, because there's not one set thing that we talk about…I had a child that was leaving school in 3 weeks, been through the whole system, hadn't got a clue about mortgages, overdrafts…haven't got a clue about life in general so you talk about different things" (Participant B).

The same participant also illustrated instances when curriculum elements are discussed, for example he recalls an incident when *"a kid said, 'will an egg explode if you put it on the fire?' So, we got Science into it"* (Participant B). Areas of the curriculum being naturally brought into the Forest School programme was noted during observations. For example, when planting beans Pupil 2 was required to consider where they would be planted and responded correctly to questions from an adult including *"how many corners on a square?"* and *"where are these canes in relation to each other?"* in order to give the plants the best chance of survival (E, p.4).

4.3.7 New Perspectives in adult/child relationships

A key feature of the programme, which emerged throughout the observations and interviews, was that adults and pupils developed more positive relationships following Forest School. This was particularly highlighted by staff also working with the same pupils at Oak School, who felt that their positive relationships with the pupils heavily influenced the relationship dynamic in school.

In order to promote new perspectives in adult/child relationships, features of the *context* include:
• pupils and teachers are in the same outdoor environment
• there are opportunities to assess children in a different way
• Forest School occurs regularly for at least one academic year
• children call adults by their first names and don't wear school uniform
• pupils and teachers interact in an outdoor environment away from the classroom
which creates the conditions for the following *mechanisms* to operate*:*
• pupils and teachers face the same challenges (e.g. adverse weather)
• adults see children's strengths which may not be drawn out in the classroom young people have time to develop trusting relationships with adults who actively listen and value their views
• young people feel they are being treated as adults so do not fight for power
• pupils and teachers get a better understanding of each other and develop trust
which produces the following *outcomes* for young people*:*
• relationships between adults and children are more positive and understanding
• adults have a more positive view of children and wider and higher expectations
• young people trust that the adults genuinely want to support them
• young people find it easier to develop positive relationships with the adults
• lasting positive relationships are formed between pupils and adults. Adults have a better understanding of the children and they have more respect for each other.

One of the comments made by Pupil 4 indicates that he has a positive view of the FSLs when he observed that one of the best things about Forest School was *"you have a laugh with Participant A and B"* (Pupil 4). Participant D (a TA supporting at Forest School) noted that pupils respected her more in school because they were at Forest School together *"his attitude towards me because we were in a different environment, total respect"* (Participant D). When asked whether observing the young people at Forest School had changed her view of them, Participant D responded:

"oh definitely…the one who comes to mind is pupil x, who at school was just horrendous and then you got him to Forest School and he was just a totally different person. There, there was someone nice in there trying to get out. But it wasn't just school. Home life was horrendous for him, there were lots of issues but…you'd get him

there (Forest School) and he could forget about everything else, this was a nice little world....I'd say (to other school staff) 'I wish you could see him at Forest School because he's not a bad kid'" (Participant D)

Photograph 4.7 shows an adult and young person working together on a horticultural task of harvesting radishes. One FSL felt that, developing positive relationships over time allowed adults to become positive role models for the young people:

"if they've not got positive role models at home, which a lot of them haven't...if you show them that somebody's going to listen, somebody's actually going to care about something, then you can be that sort of significant other, that positive role model"

(Participant A)

Photograph 4.7 A FSL and pupil working together.

High adult to child ratios also appear to facilitate positive relationship building because adults have more time for the young people. At Forest School, the ratio was two adults to five young people for Year 11s and 3 adults to five young people for Year 10s. This is a much higher ratio than most mainstream schools and higher than classes at Oak School which typically have 2 adults per 6 or 7 pupils.

4.3.8 Ripple Effects

O'Brien and Murray (2005; 2006; 2007) noted the presence of 'ripple effects', which attempt to explain how learning and experiences at Forest School might impact on children in different contexts, when other environments offer opportunities for children to demonstrate the skills they have learnt. It is suggested that these opportunities to demonstrate skills enhance the children's motivation to share their experiences and can impact upon the parental perspective of Forest School.

In order for the Forest School experience to influence behaviour in other aspects of life, features of the *context* include: • opportunities for demonstration of skills and knowledge in different contexts (e.g. home or school).
which creates conditions for the following *mechanism* to operate: • children are enthusiastic about Forest School and talk about it in other contexts
which can produce the following *outcomes:* • parents become aware of their child's interest and children grow in self-esteem from having their achievements valued by their parents. Families may visit woodland settings more often

Ripple effects were noted in the accounts given by some of the young people and also by their parents. For example, pupil 1 thought it was "*most likely*" that he would use skills at Forest School in other contexts, particularly on a future college course about animal welfare because *"if they'll like they'll ask me, oh what type of plants would be poisonous (to animals)"* (Pupil 1). Pupil 1's father commented that the skills Pupil 1 had gained at Forest School would help him when the family go on camping holidays:

"before, he would just stand there. Now he will have an idea of what to do and will get on and do it"   (G1)

The mother of another pupil with behavioural difficulties said that her child (Pupil 4) wanted to do *"woodwork and carpentry"* when he leaves school *"because he's been doing that sort of thing at Forest School"* (G4, p. 1). She also said that she now trusts him to use tools to help around the house:

"I'll say to him, can you go and fix the shed? Now he'll go and try to do it and he likes it that he's being trusted to use the tools"   (G4)

4.3.9 Emotional Well-being and Behaviour

Although this theme was not well established in the RS and did not feature in O'Brien and Murray (2005; 2006; 2007), this theme emerged clearly from the data in the RE, possibly due to the nature of the difficulties experienced by the group of pupils in this study. Participant C noted the difficulties young people had following rules in school:

"if you give them free time in a classroom setting it just goes absolutely mad and they're running out the classroom".   (Participant C)

In order to support the emotional well-being and behaviour of the young people in the programme, features of the *context* include:
- opportunities exist for free play without adult agenda
- adults can be positive role models and provide 'key adult' relationships
- regular access to a natural woodland environment
- pupils with difficulties at home can access a different environment
- opportunities for repetitive physical activity (e.g. whittling)
- rules are more relaxed than school and rules that do exist have safety reasons
- informal, relaxed environment with trusting relationships between adults and pupil
- Forest School occurs for one day per week and may require pupils to stay in school (i.e. not be excluded)
- the environment offers a vast, free space

which creates conditions for the following *mechanisms* to operate:
- young people and children are not restricted or embarrassed about play
- young people are not inhibited to talk about their feelings or experiences to Forest School staff
- the environment has a calming restorative effect on the young people
- children can have a different focus and time to relax (non-effortful attention)
- children engage with repetitive behaviours as a coping strategy to help them regulate their emotional state
- children understand the rules and boundaries and the reasons make sense
- young people trust the adults not to report inappropriate language to school staff if it not directed at another pupil
- children think 'if my behaviour is poor at school I will not be allowed to go to Forest
- School'
- children do not feel physically trapped and can see around them

which produces the following *outcomes* for young people*:*
- young people develop social skills which supports relationships and limits conflict
- young people develop emotional literacy and ability to reflect on experiences
- young people's moods are more positive at Forest School
- resilience is enhanced and the impact of external influences reduces
- children use coping strategies to deal with anger so reduces challenging behaviour
- children follow the rules of the setting and feel safe and calm. Attendance improves, there are fewer exclusions and less episodes of conflict
- less frequent inappropriate language at Forest School
- Forest School can be an external motivator for positive behaviour in school
- young people feel safe at Forest School and behaviour is more compliant

To illustrate the contextual feature of opportunities for repetitive activity, a pupil was observed whittling fire sticks to be used when lighting a fire for approximately 10 minutes in photograph 4.8.

Photograph 4.8 A pupil whittling to make fire sticks.

Consent not gained for publication of this photograph on the internet.

Forest School staff also noticed that the outdoor natural environment played a part in supporting emotional well-being, for example:

"it's not school environment, there's no walls, there's no ceilings, they're not feeling trapped…some of them are like caged animals when you do that, when you bring them out here they've got the space, they can see what's around them, and it just completely changes most kids' moods".   (Participant A)

Participant B noticed that some young people had opened up to him at Forest School about difficulties in their lives, which he had not observed in a school environment:

"it's (Forest School) the best place in the world for them to talk about things that they wouldn't talk about in school to any of the staff and the therapists"   (Participant B)

A TA working at Oak School and at Forest School also observed that:

"in school his language was atrocious, but out there (at Forest School) you never heard him swear, it was just a total turn around and people couldn't believe it when I used to come back and say he never swears at Crow's Wood"   (Participant D)

The same participant also felt that Forest School could act as an external motivator to keep children thinking about their behaviour in school. She said:

"for some of them it is like that carrot, if they don't behave and they get excluded, then no Crow's Wood. I think it does make them stop and think"   (Participant D)

The mother of pupil 4 (who has behavioural difficulties) felt that her son *"likes how they're treated there"* (G4) due to being given responsibility. She said *"in school he wouldn't be given a knife or a mallet; there'd be a big drama"* (G4) whereas at Forest School he was given the responsibility to use these tools and had gained the trust of the staff through his ability to use tools safely. Pupil 4's mother was aware that her son *"has problems in his lessons"* but had *'got calmer since going to Forest School"* (G4). She had received communication from school staff over concerns about her son's behaviour in school but felt this did not happen when he was at Forest School, *"at least I know they'll be no problems on a Thursday"* (G4).

4.3.10 Enabling Aspects

Many studies into Forest School have focused on outcomes for children (e.g. Lovell, 2009a:b, Roe and Aspinall, 2011a) but have not looked in depth at exactly how Forest School works. As this was a focus of the current study, Forest School staff were asked to explore these aspects and subsequently the themes of 'enabling' and 'hindering' emerged. Three of the Forest School staff (Participants A, B and C) had been involved in the programme for 3-6 years (appendix 8.7), so were considered well placed to comment on features of the programme which make it better or limit its effectiveness.

In order to ensure the programme works effectively, features of the *context* should include:

- increasing the adult to child ratio by allowing an additional member of staff from school to go with the group. This adult must understand and support the Forest School ethos
- a skilled Forest School leader who embeds a child-led ethos, has a high level of practical skills and can relate to the young people
- the Forest School site is sufficient distance from the school site
- the wood is large enough for different groups to have their own 'camps'
- senior leaders at the school and environmental centre support the programme by giving it time

which creates conditions for the following *mechanisms* to operate:

- all adults promote the same child-led approach and background information about young people can be shared by the adult from school
- young people notice the adult's practical skills which motivates them to want to gain those skills
- young people understand that rules and boundaries are different from school
- children won't feel jealous or upset it the camp is shared and/or their creations get moved
- Forest School leaders can be autonomous and feel trusted to implement the ethos of Forest School

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> which produces the following *outcomes* for staff and/or young people*:*
> - young people understand the Forest School ethos and Forest School staff understand the individual needs of the children due to good communication
> - positive and motivated working relationships are established
> - young people's attitudes are more positive
> - anger or poor engagement is prevented
> - the programme continues and is not undermined by professionals with different agendas so the child-led approach is promoted

Some of these aspects are illustrated by quotes from the Forest School staff, for example Participant B felt that:

"you've got to have the support of the senior leadership team (SLT) but you've got to also have them to step back. I will make it work, I know that, so they've got to leave me, but you need that support initially"   (Participant B)

This suggests that FSLs need the SLT to plan, fund and staff the programme, but after these aspects are in place Forest School works best when staff feel trusted to implement the programme and keep the ethos consistent with the child-led approach which they find supports positive outcomes.

Forest School staff with a high level of practical skills was identified as an enabling aspect because they model their skills which in turn inspires the young people to become motivated to also gain the same skills. Photograph 4.9 illustrates pieces of jewellery made by melting metal in the fire and putting it into a hand-carved mould. The young people were involved in making these items which were given to them as a keepsake, but this would not have been possible if the Forest School leader did not have the necessary skills to model and demonstrate the techniques involved.

Photograph 4.9 Jewellery made at Forest School.

One FSL (Participant A) noted that having additional staff members from school helped the programme by raising the adult to child ratio. However, this was only helpful if that staff member was motivated to promote the Forest School experience and understood the child-led ethos. He said:

"you need the school's idea with always coming out with a member of staff from the school, that member of staff from the school needs to be clued up about what Forest School is. That can be a big drawback if you've got somebody who doesn't like being outside in the woods"   (Participant A)

It was also identified that Forest School staff sharing a certain amount of background information about the young people enabled the FSLs to plan activities appropriately and sensitively with regard to the pupil's individual needs and experiences. This was illustrated in a powerful extract from Participant A when he asked for background information:

" I have had um, not so much the schools but definitely the PRUs turn round and say we're not giving you that information...all you're going to do is use it to pigeon hole them. When what I do is completely the opposite, if I get information which says they've got issues... I can use that to work with them, and not work against them. For instance, I wasn't told one kid didn't have a mom, she'd died the year before and we were sat out here asking him about 'oh what are you doing when you get home, is your mom cooking you tea?'...Information like that you need to know 'cuz that can really set a kid off".
                                                                                            (Participant A)

4.3.11 Hindering Aspects

This theme is slightly different to the others in that the participants have hypothesised about or recalled previous hindering aspects, given the current programme under study is currently well established and considered to be effective by senior leaders. Therefore, many of these aspects appear in blue (partially important) as they may not be currently posing a threat to the programme, but were raised by the four Forest School staff due to their potential to either stop the programme completely (e.g. funding cuts) or severely limit the effectiveness (e.g. too many children sent to Forest School). Hindering aspects are effectively negative mechanisms, which limit or hinder programme success (Pawson and Tilley, 2004). The following hindering aspects are presented as follows:

Contextual elements which may threaten programme success include:

- financial threats to school budget
- bad weather conditions
- the rules at Forest School are different to school and staff may allow behaviours which are not acceptable in school (e.g. some swearing)
- environment is new so some children may lack experience in a woodland setting
- the young person's unique personal preferences, experiences or SEN and lack of Forest School staff information about individual needs
- exterior influences on the young person (e.g. unstable home life)
- children may be in classes at school with other pupils who do not attend Forest School
- free choice and child-led activities mean young people may choose to sit quietly rather than engage in an activity

which set up the conditions for the following *mechanisms:*

- funding could be withdrawn completely for the programme, or too many children could be sent so adults do not have time for individuals
- staff or children may not want to go to Forest School in bad weather and parents may keep their child at home
- some members of school staff may feel Forest School is inappropriate as rules are different, so there is little consistency in terms of behavioural expectations
- children may feel frightened of the risks at Forest School and lack of visible boundaries
- young people may find it difficult to cope with changes to their environment or may not be motivated to attend Forest School due to anxiety or dislike of the environment and/or activities
- young people may have difficulty concentrating due to being distracted by the external influences (e.g. home life)
- children may be in classes at school with peers who they do not have a positive relationship with and don't attend Forest School with, so this interferes with learning in school
- Forest School leaders judge whether the child needs quiet time or if they are choosing not to engage

which may produce the following *outcomes:*

- Forest School is unsuccessful because quality relationships between children and adults cannot be built or maintained
- Children may not attend Forest School in bad weather and staff may also lack motivation to attend
- tension may be caused between Forest School staff and school staff which may threaten the programme's ability to continue successfully
- children may experience a negative emotional response (fear) and may not attend
- young person may refuse to attend, despite adaptions where possible to enable them to enjoy Forest School. FSLs raise this with school staff and another child will go
- engagement with Forest School is hindered and their post-school path is undesirable
- progress made at Forest School may not be transferred to school setting
- Forest School leaders have to find ways to engage and motivate pupils to stop them opting out or becoming bored

The most important aspect was that finances were not restricted, so that the programme can continue and FSLs are not asked to take more children in order for the school to get more value for money. Bad weather was also noted as having caused a barrier to some children attending Forest School:

"we do get some who are not keen on going out in the elements. So if it's cold and wet if they say 'oh I'm not going cuz it's raining', parents will keep them at home" (Participant D)

Some pupils with particular needs were noted to experience some difficulty coping with the Forest School environment:

we've got one kid who didn't like change so to start off with it's 'I'm not going on that minibus, I'm not going down there' so I suppose it's whatever their special need is" (Participant C)

This was also noted when Participant A said that in the first 6 weeks of a new programme there might be some pupil changes, i.e. one or two deciding they don't like it, so the school then send others instead. Participant A indicated that:

"sometimes they just don't like being outside, sometimes they don't like not having boundaries, it doesn't work for everybody. But those that do like it and stick it do sort of get on quite well I think and get quite a lot of out it" (Participant A)

4.3.12 Areas for further development

Although aspects relating to areas for further development were not explicitly probed, a repeated theme stemming from the two Forest School leaders (Participants A and B) was that children should be allowed to access Forest School throughout their school career, and not just in the final two years of school:

"it needs to be ongoing…it's no good giving them to me in Year 10 and 11 because they've got loads of problems stored up and loads of damage done when they're younger…" (Participant A)

A parent (G4) felt that the experience could be improved for her son by linking the Forest School work with the curriculum in school:

"if they could incorporate it into school it would work really well for pupil 4, say in Art they could design something to build there…in English they could write about it and he probably wouldn't know he was doing it" (G4)

Participant B, a FSL also working at Oak School, talked about his plans to create a Forest School area within the school grounds which would be accessible for all pupils, even those with profound and multiple needs.

4.4 Summary

Due to the high level of complexity of social programmes (Pawson, 2006), it is perhaps no surprise that a large data set has been obtained. The process of ranking in the RI has illuminated the most important aspects of Forest School for young people aged 14-16 with SEN, which will provide a focus for discussion in chapter 5 in the interest of presenting a succinct account. The triangulated approach to data gathering and iterative development of CMOCs enables the researcher to present with a reasonable degree of confidence an account of the important features of a Forest School programme and outcomes observed for the young people.

Chapter 5. Discussion

5.1 Introduction

The findings presented in chapter 4 suggest that some of the outcome themes identified in the Realist Synthesis (RS) were applicable to this small case study Forest School. However, the data gathered as part of the Realistic Evaluation (RE) case study and Realist Interview (RI) meant that the first programme specification was significantly refined, in order to more accurately reflect the Forest School programme with this particular group of young people. This section aims to discuss the findings of this evaluation in relation to the primary research question 'What are the important context, mechanism and outcome configurations of Forest School with young people aged 14-16 who have special educational needs (SEN)?' As evaluations aim to be useful to programme developers (Morris, Fitz-Gibbon and Freeman, 1987; Pawson, 2006) the features of Forest School rated most important (critical and ideal) to programme success will be discussed primarily, in order to provide a relevant and succinct account. Findings will also be discussed in relation to the wider literature before limitations and implications of the evaluation are presented.

5.2 Contextual Features

Pawson (2006) proposed that contextual features of a programme should be considered by four systemic contextual categories: individual capacities, interpersonal relationships, institutional settings and the wider infrastructure. Therefore, the contextual features of this Forest School are addressed in the following four sections.

5.2.1 Individual Capacities

Individual capacities of the young people and adults involved in the case study Forest School impacted upon how well it worked. The Forest School programme under study was offered to Year 10 and 11 pupils at Oak School on a voluntary basis, and it was reported that occasionally young people decided they didn't like the programme after a few weeks of attending (appendix 8.7). Therefore, when considering 'for whom' a programme works (Pawson and Tilley, 1997) it appears that 14-16 year olds with SEN need individual capacities to cope with outdoor environments, relaxed rules and tasks of a practical nature, in order to gain positive outcomes from Forest School.

Capacities that young people brought to the programme also impacted upon their outcomes, which supports Bozic and Crossland's (2012) finding that *"programmes do not work the same way for everyone"* (p.8). For example, young people with infrequent verbal communication were heard speaking more regularly at Forest School, a finding also noted by Swarbrick, Eastwood and Tutton (2004). Additionally, one pupil in this study experienced ADHD but was anecdotally reported to concentrate for longer at Forest School than at Oak School, which adds to the findings of Faber Taylor and Kuo (2009). Similarly, the findings of this evaluation suggested that Forest School had a calming effect on young people with emotional and behavioural needs. This adds to the findings of Roe and Aspinall (2011a), who found that Forest School had a significantly greater positive impact on mood for 11 year olds with challenging behaviour, in comparison to those with teacher ratings of 'good behaviour'.

The capacities of the Forest School Leaders (FSLs) appeared to impact upon the motivations of young people to engage positively with the activities on offer, particularly in relation to their practical skills, commitment to adhering to a child-led approach and to relate to the young people. FSLs with high levels of practical skills were required for Forest School with 14-16 year olds because this supported the pupil's ability and motivation to gain practical skills, to demonstrate responsibility when using potentially dangerous tools and to meet assessment criteria (NOCN, 2013). When FSLs gave young people opportunities to demonstrate appropriate risk taking this appeared to support their confidence, motivation and independence. This ability to appropriately risk take extends the findings of Waters and Begley (2007) to the case study population and suggests that a successful Forest School requires FSLs to create opportunities for young people to demonstrate responsibility by being trusted, although practitioners must clearly strike the balance between providing risk taking opportunities and ensuring safety (Waters and Begley, 2007).

The present study indicated that skilled FSLs and teaching assistants supporting the programme must share an understanding of the child-led ethos of Forest School and support this by modelling activities, rather than directing young people to tasks (Cree, 2009). This ethos also set up conditions for children to develop confidence by not being offered adult support too early, instead needing to think about the task themselves first. Additional TAs need to be comfortable with being outside and understand the Forest

School approach, otherwise this can hinder the programme, as children get conflicting messages about the extent to which the programme is child led. This potential for inconsistencies in FSL and school staffs' understanding of the child-led approach is consistent with the findings of Maynard (2007a). Skilled adults at Forest School also modelled that failure is acceptable, for example they also broke pieces of wood accidentally when working on projects. Adults calmly locating another piece of wood to use seemed to show the young people that it is ok if something goes wrong and this supported their confidence and motivation to persevere.

5.2.2 Interpersonal Relationships

The present study indicated that positive working relationships between adults and young people were critical for programme success and that trusting relationships enabled young people to build confidence and confide in how they were feeling. Positive relationship development was facilitated by high ratios of adults to young people, so that adults had time to talk to the young people individually. The present study indicated that trust supported young people to feel comfortable to discuss difficulties they faced with the adults in the Forest School environment. This allowed adults to offer support and advice about any difficulties and the young people's futures in general.

The child-led nature of Forest School is well established (FSA, 2013) and sets Forest School apart from the UK curriculum (DfEE, 1999) and outdoor adventure programmes (Donnelly, 2013). At this case study Forest School, relationships between adults and young people were viewed by FSLs as partnerships (appendix 8.7). For example, young people called adults by their first names, uniform was not worn and everyone was involved in creating the rules and running the activities (e.g. deciding where shelters would go). The findings of this study extend Forest School research, as the greater level of equality between adults and young people aged 14-16 was not explicitly reflected in the extant evidence base. Forest School staff also working at the Oak School site noticed that positive trusting relationships, which were developed at Forest School, transferred back to school. New perspectives in relationships emerged strongly; adults and children saw additional strengths and qualities in each other and adults developed empathy for the difficulties faced by young people, and communicated this to other Oak School staff (appendix 8.7).

At this Forest School, young people had frequent opportunities for teamwork and seemed to learn that more could be achieved when working together (Massey, 2004; O'Brien and Murray, 2005). For example, when making a wooden pig it was easier when one child held the wood while the other hammered a nail in (photograph 4.2). This study highlighted that the practical nature of activities enabled young people with SEN to show their strengths, which may not be apparent in the traditional school classroom. The current evaluation also extends previous research by finding that strong communication between the adults was a critically important enabling feature to ensure all staff had an understanding of pupils' individual needs and circumstances, in order to work sensitively and effectively with them.

5.2.3 Institutional Settings

Spending a day per week in a natural woodland environment for at least one academic year is unique to the practice of Forest School (FSA, 2013) as opposed to other outdoor education activities, which are often short-lived (e.g. Go Ape, 2014). This contact with nature is believed to be intrinsically desired (Kellert and Wilson, 1993) and provides a restorative experience (Kaplan, 1995). Opportunities for repetitive activities such as whittling wood seemed to calm young people who experience difficulties with emotional regulation or in relation to ADHD (e.g. photograph 4.8) The environment also provided natural resources to support the practical activities (Knight, 2009) and the need to share these resources supports social development, particularly when certain tasks such as moving heavy objects requires more than one person (Massey, 2004).

The programme ethos focuses on child-led activities, where adults are facilitators not teachers, thought by some to constitute good practice outdoor learning (Maynard and Waters, 2007; Bilton, 2010). During child-led activities at Forest School, young people are not rushed to move onto other activities, so have the time and space to persevere on projects and to consider problems without the requirement to give adults an immediate response (appendix 8.8; Maynard, 2007a; Swarbrick, Eastwood and Tutton, 2004; Borradaile, 2006; Knight, 2011b).

The development of practical skills enabled young people to gain qualifications (NOCN, 2013) and supported their success in other settings such as work, home and college. Crow's Wood is large so young people don't have to share their camp with

other groups and the natural woodland setting enables adults and children to share the same challenges (such as coping with adverse weather) which supports the development of equality and positivity in relationships (O'Brien and Murray, 2005). The present study appears to suggest that relationships building enables adults to focus on the 'whole child', which is facilitated by the different rules and environment gained from being away from school (appendix 8.7), extending the findings of O'Brien and Murray (2005).

5.2.4 Wider Infrastructure

This programme requires positive partnerships between senior leaders from Oak School and Crow's Wood. Oak School have shown a 5-year commitment to using Forest School at Crow's Wood and support the young people gaining qualifications through this approach (NOCN, 2013). Previous research suggests that some teachers have difficulty 'stepping back' from directing the young people to activities (Maynard, 2007a) but this is not a difficulty in the case study Forest School where all adults share a child-led ethos. In this evaluation, findings suggest that this Forest School was successful for some learners with SEN because senior leaders support the FSLs to implement the programme autonomously, enabling them to adhere to the child-led ethos of Forest School (FSA, 2013).

The parents who contributed to this evaluation spoke of the Forest School experience supporting their child's independence and ability to succeed in tasks of a practical nature. One parent felt confident that her child did not elicit challenging behaviour at Forest School, suggesting she had become aware of the positive effects of the environment, activities on offer and novel way adults at Forest School worked with her son (appendix 8.10). These 'ripple effects' of Forest School were noted in O'Brien and Murray (2005; 2006; 2007) as well as the findings of this study.

5.3 Mechanisms

Key mechanisms identified were changes in the reasoning and thinking of individual young people, and the cultural changes to the group of young people attending Forest School as the programme developed over time. On an individual level, young people who were suited to the outdoor environment become more confident and motivated because the opportunities on offer were achievable and interesting to them. At this

Forest School young people learnt that it doesn't matter if they fail at a task, so beginning a project again which has failed is less unsettling because they have observed adults trying, failing and then succeeding at practical tasks.

Young people appeared to feel safe in the Forest School environment, responding well to being allowed to follow their interests and the reduced time pressure, which supported intrinsic motivation and interest in their surroundings. This study supports the non-effortful attention provided by natural environments (Herzog, Black, Fountaine and Knotts, 1997) and the opportunities for reflection and restoration it provides (Hartig, Mang and Evans, 1991). Young people seemed to become more aware of risk and independently able to consider risks to themselves and others, as the positive group culture developed. Experience of being in the same conditions as others and observing that more can be achieved together improved the awareness of the strengths of others. This recognition of other's strengths altered the social hierarchy in the group, a finding not reported by other Forest School researchers as yet. The present study appears to indicate that peer social connectedness reduces conflict at Forest School, which is also transferred back to the usual school environment.

Multi-sensory experiences on offer at Forest School and opportunities for teamwork in practical activities provided a stimulus for verbal communication and gave children opportunities to demonstrate and practice leadership skills. Adults were then able to extend young people's speech and provide new vocabulary. Key mechanisms within the present study included young people having opportunities to explore and develop creatively due to the practical and artistic nature of activities and tasks. Young people realised they needed to listen to the adults in order to be given responsibility for using potentially dangerous equipment, which all pupils in this study wanted (appendix 8.11).

FSLs in the present study were able to set up these mechanisms as they felt trusted by senior leaders and because the site at Crow's Wood is large enough to ensure children have their own space and do not have to share the camp with other groups. All adults promoted the same ethos, meaning young people understood the rules and boundaries and saw reasons for safety rules, which were in place. According to the adults running this Forest School, young people's behaviour was generally better at Forest School in comparison to school, which was also suggested by Roe and Aspinall (2011a) with 11

year old with SEN. Despite the thinking that young people's behaviour was less desirable in school, for those which potentially more capacity to link their behaviour and consequences, the threat of not being allowed to go to Forest School due to poor behaviour in school sometimes seemed to encourage better behaviour in school and reduce exclusions (Ritchie, 2010).

Negative mechanisms (Pawson and Tilley, 2004) were discussed during the interviews with Forest School staff. Some of these negative mechanisms or 'hindering features' had already been addressed by the experienced FSLs, and therefore didn't pose a threat to the current programme and hence their ranking as predominantly 'partially' or 'not important' to programme success. The hindering mechanisms identified included parental concern about bad weather and limited background information given to the FSLs about the young people attending the programme to support planning. The only hindering mechanisms thought to pose a critical threat to the programme was a reduction in school funds which could mean ceasing Forest School altogether or senior leaders at the school sending too many young people to Forest School, which would negatively impact on the quality of relationships between young people and FSLs. It is important that senior leaders and Forest School practitioners are aware of these negative mechanisms which have the potential to reduce the effectiveness of the Forest School programme.

5.4 Outcomes

The current study revealed nine outcome themes, all of which had arisen in some form within the existing literature (e.g., O'Brien and Murray; Roe and Aspinall, 2011a). However, all themes were developed and refined during the RE, particularly the outcome theme of 'Emotional Well-being and Behaviour'. This was likely to have occurred because some of the young people within the case study experienced SEN in relation to emotional needs, and therefore changes in this area were perhaps more noticeable (Roe and Aspinall, 2011a). The current study revealed multiple outcomes of Forest School, which is expected in an RE (Pawson, 2006). Multiple outcomes are also likely to occur due to individual differences, which RE is able to account for, unlike more positivist studies (Pawson and Tilley, 1997). Heterogeneous characteristics of the individuals in the programme impacted upon the level of engagement with the resources on offer at the Forest School, for example those with emotional needs were observed

working more calmly and shy children were observed opening up more once positive trusting relationships had developed. Despite individual differences, Forest School was still considered by the participants to have positive effects for all individuals attending.

Outcome data was gained qualitatively through interviews and quantitatively through questionnaires (appendix 8.12). The results of this evaluation supports the findings of other studies which have concluded that Forest School can improve outcomes for children and young people in the areas of confidence (O'Brien and Murray, 2005), physical fitness (Lovell 2009a; 2009b), social development (Massey, 2004), emotional well-being (Roe and Aspinall 2011a; 2011b), language and communication (Swarbrick, Eastwood and Tutton, 2004), motivation (Murray, 2003) and learning (Borradaile, 2006). Borradaile (2006) also found that Forest School developed a culture of enterprise, as young people gained skills they could use to create items to sell, which was also observed within this study. Practitioners talked about 'streetwise' young people coming to Crow's Wood and playing like young children (appendix 8.7). The current study therefore suggests that the benefits of play, which are well established for children aged 0-5 (Moyles, 2010), may also apply to young people aged 14-16 with SEN, particularly those with poor social skills.

Ridgers, Knowles and Sayers (2012) found that more appropriate risk taking occurred with pre-school age children attending Forest School and this was also applicable to the young people in this evaluation, who were observed being more willing to take risks but also considered the danger to themselves and others. Young people also became more knowledgeable about the natural environment and curious about the natural world which supported their learning about flora and fauna to a level of maintenance (O'Brien and Murray, 2005; 2006; 2007). Young people in this study demonstrated pro-social, helpful behaviour and became more aware of others and the need for teamwork. Through this, their negotiation, listening and communication skills improved and shy children communicated more frequently in this environment. The relaxed ethos of Forest School in this study enabled children to take their time over projects or problems they were working on which gave them more chance of success, leading to heightened perseverance, confidence and motivation to attempt other tasks in the future (O'Brien and Murray, 2005; 2006; 2007).

Although interviews with the young people suggested they considered that the main outcomes of Forest School was development of practical skills (appendix 8.11), adults involved in Forest School were much more likely to focus on development of confidence, social skills and the positive impact on young people's emotional well being (appendix 8.7; 8.10). This perspective was reflected when FSLs rated the development of young people's practical skills as 'ideal' to programme success, but opportunities for discussing difficult issues were 'critical' with this group. This perspective was likely to occur in this case study due to the nature of the needs experienced by young people in this Forest School. Interestingly, adults almost seemed baffled by the observation that young people who used inappropriate language (swearing) regularly in school did not seem to do this at Forest School. Through probing this phenomenon during the RI, the group decided that trust in the adults meant that young people remained calmer. Opportunities to discuss issues at Forest School, e.g. incidents in school, seemed to develop the young people's capacity for reflection and emotional literacy, an opportunity rated as critical for this group.

5.5 Summary

The findings of the RE show some similarities with previous research (e.g. O'Brien and Murray, 2005; 2006; 2007, Roe and Aspinall, 2011a) but also refines and extends these outcomes for young people aged 14-16 with SEN, a population which has not yet participated in Forest School research. The findings support research which suggests that young people with SEN can gain positive outcomes from attending a Forest School programme over time (Roe and Aspinall, 2011a; 2011b). Therefore, if practitioners are considering use of the outdoors as an effective alternative curriculum for young people with SEN (Reed, 2005), Forest School should be considered due to the positive outcomes which can occur.

Individual capacities and characteristics of adults and young people involved in Forest School hugely influence the programme outcomes, which links to Roe and Aspinall's (2011a) finding of a significant difference between ratings of mood for those displaying 'poor' and 'good' behaviour, after a Forest School day. Although research has documented the majority of the positive outcomes highlighted in this research, no previous studies have addressed in such detail the contextual elements of Forest School

required to create the conditions for mechanisms to produce outcomes for young people aged 14-16 years old with SEN.

Critical contextual conditions included practically skilled FSLs who are motivated to understand vulnerable young people and develop positive relationships with them. Features of the environment (a large, natural woodland) provided the context for practical skills development. It is acknowledged that this programme does not work for everyone, but the young people who react positively to the natural environment over time, can gain some positive outcomes.

As well as being the first study to investigate Forest School with this participant group, it is also the first RE of Forest School. The RE framework has supported scientific analysis of qualitative data through iterative and critical development of a final programme specification (Pawson and Tilley, 1997). Although RE has provided a framework for detailed analysis of how Forest School works to set up outcomes for young people aged 14-16 with SEN, it is acknowledged that this approach has limitations, which may impact upon the degree of certainty with which claims can be made.

5.6 Limitations to the Realistic Evaluation (RE)

Limits to the current study created by the case study design and data gathering tools are discussed in this section, as well as the steps taken to reduce the impact of these limitations. Firstly, limitations of a realistic approach will be explored, including the complexity involved in evaluating a social programme and some of the steps taken to tackle the challenge this creates. Timmins and Miller (2007) found difficulty distinguishing between contexts and mechanisms using RE, particularly as outcomes can become a context or a mechanism for other, subsequent outcomes. This high level of complexity within RE of social programmes is acknowledged by Pawson and Tilley (1997) who say this is unavoidable. Indeed, Pawson (2006) suggests that programmes can be so complex and influenced by such a wide range of issues, evaluators will never have entirely full and accurate knowledge of how a programme works. To gain only partial knowledge of a social programme after extensive time and effort researching is disappointing. However, scientific realists consider that programmes are so complex that no methodological design would be able to capture a complete picture of each and

every influencing feature, but RE is more open about the presentation of 'provisional theory' than other epistemologies (Pawson and Tilley, 1997).

When drawing out elements related to contexts, mechanisms and outcomes (CMOs) from the existing Forest School research and refining this as part of the RE, subjective responses from the researcher are required to make a judgment on whether a code relates to a C, M or O. Abstraction and formulation is inherently subjective, despite some attempts to avoid this including regular checking of the definition of a C, M or O (Pawson and Tilley, 1997), inter-rater checks and and an iterative refinement of the three programme specifications.

REs do not typically use group outcome data as the focus for evaluation but instead recognise that outcomes are different for everyone to some extent, due to differences in individual capacities as a contextual feature. For the present study this means where outcome data is presented, it does not necessarily apply to all case study participants or any other young people accessing Forest School. Therefore, this limits the generalisation or replication of this study, as changes to individual characteristics of young people attending Forest School may alter the subsequent mechanisms and outcomes observed. Indeed, replication with the same participant group is likely to reveal new data as the outcomes gained in the previous evaluation would, in turn, influence the contextual features participants then brought to the subsequent programme, for *"our actions are always prone to change the conditions that prompt them"* (Pawson, 2006, p. 18). However, realistic evaluators believe that findings provide frameworks to compare similar programmes which can be helpful in practice (Pawson and Tilley, 1997).

Another limitation to the RE approach was the extensive time taken to develop and refine programme specifications, which aimed for a succinct, clear account and to avoid any duplication. Data analysis involved thematic analysis over an extensive amount of qualitative data and, despite the aim of a succinct account, a large data set requiring analysis and interpretation was still gained. There was a need to strike a balance between presenting complex programme findings, which were also coherent and useful to practitioners.

5.6.1 Case Study Design

Despite adhering to case study guidance (Yin, 2009) and triangulating evidence to attempt to reduce threats to internal validity, the sample size of young people was small (n=4) which restricted the generalisability of outcomes to other, even similar groups of young people. The small sample size of young people and parents involved was partially expected due to the small numbers of pupils from Oak School accessing the Forest School programme (n=10) and the vulnerability of the group targeted. Although the case study would have been strengthened by more pupil and parent participants, all Forest School staff who were approached agreed to be involved. It could be argued that practitioners running and facilitating programmes are most likely to have ideas about how they work (Pawson and Tilley, 1997) so therefore, those most able to comment on all three features of the Forest School programme (C, M and Os) were successfully engaged in this evaluation.

Purposive targeting of individuals most able to answer the research questions may have led to sample bias. Additionally, pupils in this study were of similar ages and needs (e.g. all had a statement of SEN) to others at Oak School, but they had been individually invited to Forest School by senior leaders and, on acceptance, engaged in it for at least a year. This means that this small group cannot be described as wholly representative of the whole school, as senior leaders may have chosen pupils that they considered may benefit most from Forest School. A claim of RE is that social programmes work differently for different people (Pawson, 2006). Therefore, the use of four pupils in this case study means there are likely to be some gaps in the data, e.g. where these pupils have not explained how Forest School might impact upon all young people aged 14-16 with SEN.

A researcher-as-observer within a case study design has strengths due to the ability of the researcher to become embedded in the programme to aid their understanding, but is also limited by the potential for researcher bias and selective attention during observations (Robson, 2011). The researcher's engagement with the Forest School literature and previous experience of running Forest School may have heightened selective attention by focusing on certain features of the programme which had been either read in the literature or previously observed. This knowledge influenced the decision to undertake narrative observations which did not pre-code for certain expected

behaviours, with the aim of gathering data about new CMOCs within the developing programme specification. Robson (2011) warns that participants can alter their behaviour when knowingly observed. In order to attempt to limit this effect, the researcher spent four days at Forest School becoming familiar with participants so they felt more comfortable and not pressured to behave differently.

As aforementioned, the outcome data of this study is not generalisable to other groups due to the very small sample of young people involved. However, information about the contextual features of Forest School and mechanisms which led to outcomes for the young people can be disseminated to other settings looking to set up their own Forest School programme (Pawson, 2006). Although it is impossible to guarantee the same outcomes in different Forest School settings, findings can be generalised to an extent because *"we move from one case to another, not because* they *are descriptively similar, but because* we *have ideas that can encompass them both"* (Pawson and Tilley, 1997, p. 119).

5.6.2 Data Collection Tools

Data collection tools were designed to gather relevant data through multiple sources of evidence according to an effective case study design (Yin, 2009). Pawson and Tilley (1997) proposed that any method of gathering data is acceptable within a RE, as long as the tools are sufficient to gather relevant data which enable hypotheses raised in the RS about how a programme works to be tested. Although data gathering tools were multiple and designed to address the research questions, they are not without limitations, as discussed henceforth.

5.6.2.1 Observations

Multiple narrative observations were undertaken in order to focus deductively on the hypotheses raised in the RS, whilst also being open to inductive interpretation of new codes and themes (Braun and Clarke, 2006). Both groups (Year 10 and Year 11s) were observed for exactly the same amount of time (two days each) in order to draw equally from the pupil participants involved and avoid observer bias. It is recognised that using narrative tools means that a different observer would have been unlikely to have observed exactly the same behaviours as were recorded, so validity of the data may be

compromised. However, this could also happen if structured techniques were used and it was felt more important to be open to new codes and themes emerging.

To limit the effects of observer selective memory, observations were written at the time and then coded shortly (within a week) afterwards. The quality of these observations would have been improved if more than one researcher had conducted observations, however this was beyond the scope of this study due to already demanding a high level of Forest School staff time for interviews. Further research into Forest School might wish to draw on both narrative and structured observation tools and observe towards the start of the young people's Forest School experience as well as later on in order to draw some comparative observation data.

5.6.2.2 Documentary Evidence

This method of data gathering was useful to programme specification development because it set out some elements of how the programme works (e.g. through calculated risk assessments) and what skills young people could be expected to gain through attending (e.g. NOCN, 2013 assessment criteria). However, it is acknowledged that evidence from the documents should be checked via observational data as otherwise there is no guarantee that what is proposed by the documents is actually happening. Therefore, documentary analysis was used as part of triangulated data gathering but not as a sole source of evidence. Evidence from available documents (appendix 8.9) contributed to CMOC development in the final programme specification (appendix 8.19) but was only included when data to support it had also been gained from other sources.

5.6.2.3 Questionnaires

Pawson (2006) suggested that some quantitative data can be used to support the understanding of programme outcomes and therefore a questionnaire was designed to attempt to gather this evidence. Programmes within education are often evaluated after they have started running (Cohen, Manion and Morrison, 2011) and therefore no pre-intervention data was available for this case study group. This weakens the strength of the questionnaire measure, which asked adults who knew the young people well to consider how certain aspects of their development may have been impacted upon by the Forest School programme. In order to avoid leading participants to state positive

responses (Cohen, Manion and Morrison, 2011), options to record 'no change' 'deterioration' and 'don't know' were offered.

Questionnaire data was used to gain some quantitative understanding of the level of change caused by Forest School, according to adults who knew the pupil participants well. Due to the retrospective nature of questionnaire administration, this data was not drawn upon in isolation to develop CMOCs as this may have reduced the validity of the findings. Instead, questionnaire data was used alongside other data collection tools to support CMOC development. Questionnaires enabled hypotheses about the outcomes of Forest School raised in the RS to be explicitly tested, such as the impact on the young person's understanding of risk to support their development of confidence. If this study were replicated, it may be enhanced by a more controlled attempt to also gather pre programme outcome data through questionnaires.

5.6.2.4 Interviews

Two types of interview were used in this RE: semi structured and realist (RI). In any interview there is potential for misinterpretation and demand characteristics, where a participant aims to alter their responses to suit the requirements of the researcher (Robson, 2011). To avoid misinterpretation, both interviews were recorded and participants were given the opportunity to check and refine some of the responses they had given in the semi-structured interview during the RI. The researcher being embedded in research helped to limit misinterpretation through an ethnographic understanding of meaning. In order to avoid demand characteristics, participants were informed at the beginning of both interviews that they were being asked to reply honestly in order to develop a programme specification which focused on how the programme works, rather than whether or not it does. This change in focus seemed to enable participants to answer honestly (including offering comments on hindering or negative mechanisms), rather than inviting a defensive stance.

The semi-structured interviews were conducted individually, but the RI was in a focus group due to the need to save time and enable more natural conversation to flow when discussing the second programme specification (Gray, 2004). Despite the concern that individual's views can become dominant in a group interview (Cohen, Manion and Morrison, 2011) this did not occur and each participant had the opportunity to

participate in group discussion as well as comment on and rank the programme specification individually (appendix 8.16; 8.17; 8.18). Gaining averages of the ranking assigned to each CMOC meant that the impact of any extreme views were reduced, although there was potential for some bias and skewed results as CMOCs were not ranked by all four participants, due to a need not to overwhelm people with the full data set (Thornbery, 2012).

The final programme specification (appendix 8.19) would be more accurate if parents, pupils and teachers had also been involved in the RI and therefore been asked to comment on the developing programme theory. However, this would have required a great deal of time from these participants who may not have been able to comment on all aspects of the programme, so this idea was rejected in this RE in favour of targeting the Forest School staff who were more able to comment on all areas of the programme specification (Pawson and Tilley, 1997).

5.6.3 Data Analysis

Thematic analysis was used to develop codes and themes from all of the qualitative data gathered and the six steps proposed by Braun and Clarke (2006) were followed carefully in order to support accurate and thorough data analysis. Thematic analysis was selected in this evaluation because of its ability to analysis data inductively and deductively, a feature which was required in this RE where hypotheses from the literature required testing, while remaining open to new emerging themes.

Data analysis would have been improved if more than one researcher had been involved in data gathering, coding the raw data and assigning themes to a group of codes. Although inter-rater reliability was sought to support mutual exclusivity of codes to themes, these participants were not familiar with the complex context of the programme so this may have compromised the accuracy of the process (Fereday, 2006). However, this process was sought to attempt to reduce the subjective impact of a single researcher conducting a full thematic analysis.

It is also acknowledged that there is potential for subjective bias in the way codes and themes were mapped onto the developing programme specification. A single researcher decided whether codes related to features of the context, mechanism or outcome and

there is potential for error here, particular where contextual and mechanism factors are very similar, which can often be the case (Pawson and Tilley, 1997). In order to reduce this impact, each programme specification was reviewed at least three times to ensure duplication hadn't occurred. Also, the researcher kept in mind Pawson and Tilley's (1997) advice about what constituted a C, M or O and the final programme specification was checked with critical friends familiar with RE.

5.7 The Challenge of Real World Research

It is acknowledged that research with real people in real world contexts can be complex and challenging (Robson, 2011). Although fortunately none of the case study participants were ill on the days arranged to observe or meet with them, occasionally other pupils at Forest School were absent on observation days, which might have altered the group dynamic observed. As previously mentioned, the research would have been strengthened with a greater number of pupil and parent participants. Oak School were very supportive of the research, for example they sent out consent and information forms on the researcher's behalf and also sent an additional reminder text message to those who had not replied. However further participants did not come forward at this point and senior leaders at the school felt that if families had wanted to be involved they would have responses by this point, so further contact was not proceeded with due to the need to work ethically and avoid pressure to participate (BPS, 2010). Both sites (Oak School and Crow's Wood) were extremely accommodating in allowing the researcher access to the site for research purposes. The heavy workload of all professionals meant that the researcher needed to be flexible about days and times to meet with people, however planning in advance made this possible.

5.8 Implications of the Evaluation

The implications of the current evaluation could be considered systemically (Bronfenbrenner, 1979) in that findings apply to individual, groups and organisations. Implications for individuals have been previously discussed, in that Forest School promote positive outcomes for young people who sustain their attendance on the programme, although outcomes do vary due to individual characteristics which impact upon engagement with the programme (Bozic and Crossland, 2012). At the group level, peer social relationships become more cohesive and new perspectives in relationships lead staff to attempt to change school teachers' perceptions of the young people.

Through familiarity with the Forest School ethos, teachers may be encouraged to reflect on their own approach to experiential learning (Kolb, 1984) and consider whether their approach is too adult directed, like teachers who questioned their practice after exposure to Forest School in Maynard (2007a).

At the organisational level, the current UK government have been open about drawing on effective education in countries topping the league tables (DfE, 2011) and at least one of these countries promotes an experiential and outdoor approach (OFSTED, 2003). The UK's curriculum reform states that time should be available within the school week to attend to non-curriculum demands (DfE, 2013). Therefore, teachers and senior leaders may be motivated to plan time within the curriculum where children are able to experience child led approaches throughout their education, as part of a balanced curriculum diet (Gill, 2011).

Weekly or bi-weekly outdoor education (Udeskole) is occurring already in Denmark for some children aged up to 16, and more Danish schools are planning to adopt this approach (Bentsen et al, 2009). Therefore, an implication of this evaluation could be to encourage schools in the UK to provide regular child-led outdoor activities through Forest School for all young people, including those aged 14-16 with SEN. Another finding of this evaluation is that Forest School works differently for different young people. Therefore, if schools only have the resources to provide Forest School for limited groups, the findings of this evaluation might be helpful to aid their decision making about which young people might benefit more from a Forest School programme. This may help to ensure a high level of cost effectiveness in an education system with unfortunate finite financial resources. Although this research may support decision making about who may benefit from attending Forest School, the evaluation also supports the idea of 'Forest School for All' (Knight, 2011a) due to the positive effects found for all groups involved in Forest School so far. Swarbrick, Eastwood and Tutton (2004) also highlighted the need to make Forest School experiences more accessible and inclusive, and Participant B discussed plans to create a Forest School environment which allowed access for all. It is hoped that the evidence from this evaluation might therefore support the journey of Forest School from 'the cusp' to more accepted educational practice in the UK (Knight, 2011b).

5.8.1 Implications of the Evaluation for Educational Psychologists (EPs)

EPs have a diverse role within education, for example by working with young people aged 0-25 with SEN and contributing to whole school and local authority strategic development (Hoyos, 2012). Therefore, knowledge of evidence-based programmes and interventions, such as Forest School, which are designed to support young people and particularly those with SEN, is essential for an EP. EPs are in a position to offer advice and support to schools aiming to improve outcomes for their young people, and this evaluation might be accessed by EPs who subsequently disseminate the findings to schools they are working with.

Additionally, the use of RE can be useful to EPs who are likely to undertake evaluations as part of their professional practice. Realistic evaluators understand that programmes *"contain certain ideas which work for certain subjects in certain situations"* (Pawson and Tilley, 1997, p. 215). As EPs work within a real world context with heterogeneous groups of people, an evaluative framework which appreciates the impact individual differences can make may be helpful to EPs in gaining insight into how programmes work in particular situations. An RE provides outcome data but also be useful to other settings, which is an important role for a scientist-practitioner EP (Hoyos, 2012).

5.9 Disseminating Findings and Further Research

Research reports were delivered to Crow's Wood and Oak School addressed to all participants who contributed to the evaluation (pupils, parents, teachers, FSLs, TAs and the SLTs). Pupil-friendly summary versions were sent to the young people who were involved, via Oak School. The research reports were also sent to Local Authority (LA) EPS where the research was conducted, including the Principal and Senior EPs who agreed the research. A key reason for sending the research report to other EPs was so the findings could be disseminated to schools in the LA, via their link EP. This evaluation will also be made available to the FSA, through their links with Crow's Wood. Publishing will be explored but the researcher is eager to present a paper to independent journals not associated with promoting any forms of outdoor education, in order to protect the interests of the research.

Research into Forest School in the future would be enhanced through replication of a Forest School RE with a comparable participant group, to understand how applicable the programme specification from this RE is to other settings. Further research using pre and post outcome data would strengthen the understanding of Forest School outcomes, particularly if post data could be collected longitudinally. As Roe and Aspinall (2011a) also suggested, research which can quantitatively compare the behaviour of challenging pupils in Forest School and typical school would be helpful to further the understanding about the potential of Forest School to provide a restorative effect and the extent to which an Forest School outcomes can transfer into other settings.

5.10 Summary

This RE investigating how Forest School works for young people aged 14-16 with SEN found that, over time, features of the programme support young people to develop confidence, social skills, language and communication, motivation and concentration, physical skills and their knowledge, understanding of the world and independence. Improvements in the behaviour of young people experiencing emotional and behavioural needs were noted, as were more positive relationships between adults and pupils and a ripple effect, where skills gained at Forest School were noted in different contexts. As the study was also interested in understanding how the programme was supported and hindered in order for this information to be disseminated to other settings, enabling and hindering features were probed and subsequently emerged. Despite gathering and triangulating a large range of data within a RE framework, the study has limitations and further research is required into Forest School with different groups and longitudinally.

Although this evaluation found some positive outcomes for young people engaged regularly in Forest School, it is not currently proposing that all children spend all week in a Forest School environment throughout their education. This study suggests that Forest School can bring out positive outcomes for some 14-16 year olds with SEN, and practitioners should use this evaluation and their knowledge of young people in their establishments to consider whether Forest School might be an appropriate alternative curriculum for those young people. The debate about the pros and cons of child-led vs. adult directed learning may continue (McManus, 2001), however what is being argued for here is a balanced approach (Gill, 2011). Given that the new curriculum suggests

there should be time within a school week for non-curriculum learning opportunities, schools should be encouraged to allow children some child-led opportunities during this time, particularly where children might be disengaging due to experiencing failure within an academic curriculum (Reed, 2005). The argument here is that Forest School can provide beneficial child-led outdoor learning experiences, as part of a broad and balanced curriculum (Gill, 2011).

Chapter 6. Conclusion

6.1 Introduction

The main conclusions of the thesis are presented here, particularly how the study addressed the research questions raised in the literature review. Personal reflections on the research journey are also offered, in relation to the researcher's identity and background discussed in chapter 1.

6.2 Summary of Main Findings

This study has outlined how Forest School can support positive outcomes for young people aged 14-16 with special educational needs (SEN). This study is the first to investigate the effects of Forest School for this participant group and the first to employ a Realistic Evaluation (RE) framework in order to structure the findings (Pawson and Tilley, 1997). Therefore, this evaluation adds to the existing Forest School evidence base in the UK. Research questions focused on identifying features of Forest School relating to the context, mechanisms and outcomes which explain how the programme works, through a lens of generative rather than linear causation (Pawson and Tilley, 1997). Due to a high level of complexity within social programmes (Pawson, 2006) the research questions also attempted to identify the most important features, in order for the findings to be more useful and accessible to practitioners.

Themes identified in the Realist Synthesis were supported by the Realistic Evaluation, although the quantity and quality of detail gained through observations, questionnaires and interviews in this study meant than the final programme specification was much more detailed that the first. Codes from the data linked to one of eleven final overarching themes, mostly relating to outcome features of Forest School, but also considering how features can promote or hinder programme success. Findings of this study support previous research which suggested that Forest School can support young people's confidence, social skills, language and communication, motivation and concentration, physical skills, knowledge and understanding of the world and emotional well being. However, outcomes were varied and depended on certain contextual features of the programme, including what Forest School itself offers, the relationships between individuals on the programme and the individual characteristics of the young people attending.

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The contribution of this study is twofold; firstly to contribute to the growing Forest School knowledge base and secondly to demonstrate further how Realistic Evaluation can be successfully applied to examine how and why a social and educational programme works. Educational Psychologists (EPs) work to promote inclusion and improve outcomes for young people with SEN (Hoyos, 2012), and this study would suggest that Forest School is a valid tool for promoting these aims. Therefore EPs need to be aware of the extent to which Forest School is used within their working locality and should then promote and support the programme for use by schools. The researcher plans to promote the use of Forest School to support young people aged 14-16 years old with SEN in other future settings, and will also use generative causation (Pawson and Tilley, 1997) as a tool to evaluate projects or programmes in future.

6.3 Personal Reflections on the Research Journey

As outlined in chapter 1, the researcher's personal and professional interests in the extent to which outdoor opportunities can support the development of children and young people was the driving force behind this research. It has been a privilege to have the opportunity to engage in evaluating this Forest School programme, and to meet people with a high level of insight into how this Forest School works. The scientific realist paradigm which provided the framework for this evaluation (Pawson and Tilley, 1997) has metamorphosed the way in which the researcher views causation, and the complexity of social programmes.

There was initial concern about the lack of quantitative outcome data gained in this study, due to the researcher's background in positivist inquiry. However the findings of this evaluation, which are in the form of multiple context +mechanism =outcome configurations (CMOCs), have provided arguably even more useful data. This is because Realistic Evaluation (RE) answers the question 'what is it about this programme which works for certain people under certain conditions?' (Pawson and Tilley, 1997). Although outcome data cannot be generalised due to the small numbers of participants in the case study, information gained about features of the context which set up mechanisms for change and outcomes can be used by other settings working with similar participant groups seeking similar outcome patterns (Pawson, 2006).

Despite the useful and rich data gathered, the completion of this evaluation has been challenging. For instance, the overwhelming amount of data gathered was initially unexpected, and therefore a great deal of time was taken to analyse and refine the data in order to subsume it accurately and succinctly into a CMOC within each theme. The iterative process of refinement to ensure codes were matched correctly to context, mechanism or outcome features without duplication was onerous but reflected the unavoidable complexity of a social programme (Pawson, 2006). Therefore, despite the time taken to understand and implement a previously unfamiliar evaluation method, the quality of data in terms of richness, depth and detail of the findings made this journey entirely worthwhile.

Chapter 7. References

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Chapter 8. Appendix

Appendix 8.1. Sources and Summaries of Papers from the Realist Synthesis

Data base	Author	Summary	Peer review
Google Scholar	Murray (2003)	A participatory evaluation was conducted in Wales with Forest School leaders using focus groups and structured observation charts of children in their settings. Six key outcomes for children were presented alongside ten factors which were deemed necessary for a successful Forest School. This research resulted in a self-appraisal for Forest School leaders to use as part of their practice and also to assess the degree to which the outcomes from this project in Wales applied to other settings in England (O'Brien and Murray, 2005; 2006; 2007).	No
	Massey (2004)	A participatory case study over 1 academic year of 8 children aged 3-4 years. Used structured observations, video recording and interviews. Highlighted key themes suggesting Forest School supports personal and social development, language, learning, appropriate risk taking and transferable skills. No control group used and anecdotal in nature.	No
	Davis and Waite (2005)	Reported findings of seven participant-researcher undergraduates in three Devon settings with Reception and Year 1 children. Relied on observation, interviews and questionnaire data to focus on social skills, play, language and cognitive development. Variations in programme delivery and effects were noted and positive outcomes were illustrated with quotes and observational data.	No
	Borradaile (2006)	Scottish research to understand more about whether the results of Murray (2003) and O'Brien and Murray (2005;2006;2007) apply to Scottish settings and how Forest School supports Scotland's priorities for educational development. Findings suggest Forest School does support the Scottish agenda and Borradaile (2006) supports access for all children to the programme, although child views were not sought.	No
	Maynard (2007a)	Semi-structured interviews with 3 Forest School practitioners were conducted to find out their view of the aims of Forest School for children aged 3-5 years old. Findings suggest practitioners may over estimate impact on self-esteem and under-estimate capacity for environmental education.	Yes
	Maynard (2007b)	Discourse analysis was used to explore the discourses of two Forest School Leaders and two Teachers running a Forest School with n=16 Reception aged children and n=9 5-7 year olds with additional needs. Pre, post and follow up interviews illuminated the 'battle' between discourse of different professionals regarding the extent to which child should be allowed to take risks in the natural environment.	Yes
	Lovell (2009a;b) a= PhD thesis b= Forestry Comm. Report	This study recorded the physical activity of n=26 children aged 9-11 at Forest School and in comparison to a typical school day. Children were significantly more active at Forest School in comparison to a normal school day, even when they had active lessons including Physical Education. However the measuring devices (accelerometers) sometimes failed and only one school context was investigated.	No

	Knight (2011b)	First part of a thematic review of the contributions to her edited book (Knight, 2011a) where practitioners wrote about how Forest School has been adapted. An overlapping conceptual framework evolved.	Yes
	Ridgers, Knowles and Sayers (2012)	Focus group interviews with n=17 children aged 6-7 before and after a Forest School programme were conducted to examine children's perceptions of natural play. Forest School extended children's thinking of what natural play was and their knowledge of the natural world. The child's voice was given priority in this study but other stakeholder views were not sought.	Yes
Psych Info	Swarbrick, Eastwood and Tutton (2004)	The link between Forest School, self-esteem and learning was explored by administering questionnaires to 100 Forest School practitioners in Oxfordshire. The 29 respondents gave qualitative information about their view of the programme effects, including cases where extraordinary outcomes had occurred such as a child with speech problems speaking more clearly and confidently despite little improvement with intensive speech therapy. Although highly anecdotal, it provides information from those who are in a position to know about the effects and highlighted some challenges which need to be overcome when running a Forest School.	Yes
	Waters and Begley (2007)	The risk taking behaviours of two 4-year-old children in the same nursery were observed using a narrative observation technique on the playground and at Forest School. More positive and appropriate risk taking behaviour was observed at Forest School where the children were not reprimanded and rules were more consistent than on the playground. However, the small sample and selection based on pre-determined risk taking characteristics meant that generalisation is difficult.	Yes
	O'Brien (2009)	O'Brien (2009) used the data gathered in O'Brien and Murray (2005; 2006; 2007) to unpick in more depth how the environment and features of the programme influenced changes for the children involved. Out of the 8 themes identified in O'Brien and Murray (2005; 2006; 2007) O'Brien (2009) looked in detail at three of them: motivation and concentration, social skills and new perspectives. This detail has helped form CMO configurations but only for the three themes explored, with no justification for why these were selected out of the eight.	Yes
Web of Knowledge	Roe and Aspinall (2011b)	The emotional responses of n=8 boys aged 10-12 with 'extreme behaviour problems' were observed over 6 months at Forest School. Results suggest that, over time, more positive affective responses were observed and there was also increased trust, social cohesion and explorative activity.	Yes
Science Direct	Roe and Aspinall (2011a)	The restorative outcomes for n=18 11-year-old pupil were measured when at Forest School compared to indoors at school. Mood and ability to reflect on goals were examined and significant effects were seen in these areas, indicating a positive effect of Forest School. Pupils with initial ratings of 'poor behaviour' benefitted the most.	Yes
	O'Brien and Murray (2005; 2006; 2007)	This study was designed to understand the extent to which the findings of Murray (2003) applied to children in England. Participatory action research and appreciative inquiry of 24 children ages 3-9 over 8 months used observational data and interviews which	Yes

		led to 8 key outcome themes (an extension of the 6 themes from Murray, 2003). This offers rich qualitative data but failed to seek the child's view.	
Google	Vande-walle (2010)	Vandewalle (2010) offers a descriptive account of how Forest School is used in a primary school in Hertfordshire. All children (nursery to Year 6) access Forest School and the programme was evaluated through parental questionnaires and child interviews. Findings suggested children enjoyed and focused on the activities on offer and parents noted child enthusiasm about the programme. Vandewalle (a teacher in the school) noted ease of making curriculum links but key information including sample size and method of analysis was not reported.	No
	Ritchie (2010)	Ritchie (2010) reports on a London secondary school using Forest School as an alternative programme for pupils with SEN at risk of exclusion. Although highly anecdotal, Forest School staff felt it was good value for money due to yielding positive results and being relatively cheap to run once practitioners are trained. It was suggested that the programme reduced rates of exclusion and improved attendance.	No
	Action for Children (2010)	This is a case study account of a Forest School programme for young people involved with the Youth Offending Service and a Substance Misuse Service. Through discussions with the adults running the programme, it was suggested that the programme enhanced confidence and improved well-being. Incidents of behavioural aggression were reduced, although this relied on anecdotal information from staff.	No
	Archi-medes Training (2011a)	The impact of Forest School was explored qualitatively for a small group (n=9) of pupils from a Pupil Referral Unit (PRU). Anecdotal evidence suggests that the programme had a positive effect on social development and behaviour and also fulfilled curriculum requirements. Five out of the six pupils wants to continue with Forest School after the year-long programme had finished.	No
	Archi-medes Training (2011b)	A case study is provided of a short (14-week) Forest School programme for pupils from a special school. The information provided is extremely brief but Forest School leaders noted more positive social interactions within a three stage behavioural pattern; initially an acclimatisation phase followed by boundary testing and then more appropriate behaviour.	No

N.B Medline and EmBase revealed no relevant research. All articles are full text; abstract only texts were not required.

Appendix 8.2 Realist Synthesis CMOCs (Programme Specification 1)
An Initial Programme Specification derived from a Realist Synthesis of the Existing Literature

First 8 title outcome themes from O'Brien and Murray (2005; 2006; 2007)
1. Outcome - Confidence

Context	Mechanism	Outcome	Source
Among natural resources in a woodland setting where adults model things children can make	Child knows that creation is achievable (they have the materials and adults can help them to create)	Young person achieves at something new – receives positive feedback about their achievements which make them more likely to attempt other projects independently in future. This develops a culture of enterprise	O'Brien and Murray (2005) Massey (2004) Borradaile (2006)
Sessions are regular and frequent, lasting throughout the school year	Children have the time and space to become more at home in an unfamiliar environment & experience regular success	Children demonstrate a greater self-belief in their capabilities and are confident to try new activities	O'Brien and Murray (2005) Knight (2011b) Ridgers, Knowles and Sayers (2012) Davis and Waite (2005)
Children are taught routines for safe behaviour in the outdoors	The routines become embedded and provide a framework for safe exploration	Safe exploration enables confidence to be built through self-discovery	O'Brien and Murray (2005)
Children engage in child-led learning and choose from a diverse range of novel activities on offer set up by qualified FSL	Children initiate their own play and learning	Children are more likely to be confident to approach potentially challenging tasks	O'Brien and Murray (2005) Murray (2003) Knight (2011b)

Exposure to risk of harm in the environment with adults who don't interfere too early, e.g. tool use, proximity to fire	Child must independently consider the risk/benefit and become more aware of the risk to their body	Children more willing and able to take risks in their learning and throughout life	Manyard (2007b) Massey (2004) Murray (2003) Knight (2011b) Waters and Begley (2007)
Environment is physically away from the school	Children know there are different rules and this allows a permissive risk taking ethos	Children are more likely to take appropriate risks at Forest School (begins with physical and leads to intellectual risk taking)	Waters and Begley (2007)
High adult: child ratio means child can be supported on a task if required (e.g. building a shelter)	Child learn skills and need less help next time	Increased confidence in own ability and independence	Massey (2004) Waters and Begley (2007) Manyard (2007a)

2. **Outcome - Social skills**

Context	Mechanism	Outcome	Source
Children are given freedom to play independently of adult intervention	Children become more accustomed to working independently of adults and with other children	Children negotiate effectively with each other to achieve group tasks and gain an increased awareness of other's personal space	O'Brien and Murray (2005) Massey (2004)
Children are encouraged to work together on tasks that require more than one person (e.g. moving things)	They begin to appreciate that more can be achieved in a pair or group and listen to each other	Children's listening skills improve and they demonstrate more pro-social, helpful behaviour	O'Brien and Murray (2005) Massey (2004)
Sharing of tools and/or resources	Children realise the need to negotiate or work on tasks together	Children relate positively to members of their peer group and develop sharing skills	O'Brien and Murray (2005) Murray (2003)

Context	Mechanism	Outcome	Source
Environment presents risk of being hurt, e.g. brambles could cause scratches or trips	Children become more aware of the risks to themselves and others due to need to keep safe	Children become more aware of others and help them avoid danger and build trusting relationships.	Murray (2003) Waters and Begley (2007)
Opportunities for teamwork	Children see joint creations	More likely to seek others in the future – teamwork becomes more natural	Murray (2003) Roe and Aspinall (2011b)
Children see the physical consequences of their actions	Children become more aware of the consequences of their actions	Children take more time to consider the consequences of their actions in future	Borradaile (2006)
Children have their basic needs met (food, water)	Children are not preoccupied with meeting basic needs	Children are able to focus on fulfilling needs for relationships leading to personal growth (Maslow, 1954)	Davis and Waite (2005)
Children are free to move around in the environment and choose their play and activities	Children do not feel inhibited by rules and expectations	Shy children engage and communicate with others more, at Forest School and in the classroom	Davis and Waite (2005)
Children can move around the environment and select their activities & peers to play with	Children experience success working with different groups of pupils from the classroom environment	New friendships are formed and pupils may have a different view of their peers	Davis and Waite (2005)

3. Outcome - Language and Communication

Context	Mechanism	Outcome	Source
Opportunities for natural and spontaneous talk through play	Children recognise the need to communicate their ideas to peers on practical issues and through play	Children become better at cooperative play as they are more able to negotiate verbally with others to achieve group tasks	O'Brien and Murray (2005) Davis and Waite (2005)
Provides multi-sensory experiences/ real context for new vocabulary	They are motivated to discuss the multi-sensory experiences at Forest School	Children become more confident at communicating with peers and adults and talk about their experiences at Forest School in other contexts (e.g. home and school). They	O'Brien and Murray (2005) Massey (2004) Borradaile (2006)

			use more eye contact.	Murray (2003)
More variable and unpredictable situations than in a classroom	Children are motivated to use more descriptive language to describe the unfamiliar environment	Language skills are developed (verbal and written language). Questions become more specific	O'Brien and Murray (2005) Massey (2004) Borradaile (2006)
Culture of free speech and no pressure to give the 'right' answer	Children learn that they won't be laughed at if they say something wrong or silly	Children speak more freely and naturally – frustration is reduced	Ritchie (2010) Davis and Waite (2005)
High ratios of adults to children	Frequent opportunities for adults to extend child speech through narrating their activities or providing specific vocabulary	Extended spoken sentences and enhanced vocabulary	Davis and Waite (2005)

4. Outcome - Motivation and Concentration

Context	Mechanism	Outcome	Source
Opportunities for children to show responsibility (e.g. using knives)	Child makes the choice to act responsibility and keep themselves and others safe	Child is motivated to be responsible so keeps themselves and others safe and is allowed other opportunities in the future	Borradaile (2006)
Subjects on the school curriculum are set in a context that is distinct and different from a classroom	Children are inspired to learn from an unfamiliar environment	Children want to learn and continue going to Forest School	O'Brien and Murray (2005)
Learning opportunities are child-initiated allowing for imaginative, creative and explorative activities	?	Children persevere for longer on projects they are involved in. They are keen to attend and get ready more quickly (as opposed to reluctantly). They share their success with adults and peers away from Forest School They are more imaginative and eager to	O'Brien and Murray (2005) Massey (2004) Borradaile (2006) Murray (2003) Archimedes Training (2011)

		explore	Knight (2011b) Ridgers, Knowles and Sayers (2012) Roe and Aspinall (2011b)
Focus on developing the whole child as part of the Forest School experience	Children focus and concentrate for longer periods of time on tasks and issues that interest them	Children demonstrate an increased knowledge of the environment. They are motivated to make sense of their surroundings and learn more	O'Brien and Murray (2005)
Activities may have a large or small group element	Children have opportunities to be the leader	Increases motivation to take part	Massey (2004)
Children are out in all weathers (dressed appropriately) on a regular basis	Children come to feel safe in the environment and learn to take steps to look after themselves (wearing coats when cold)	Children feel comfortable to engage with the Forest School environment and weather is no longer a barrier to play	Massey (2004) Murray (2003) Ridgers, Knowles and Sayers (2012)

5. Outcome - Physical Skills

Context	Mechanism	Outcome	Source
The environment provides challenges which need overcoming, such as walking over rough terrain	Gross motor control is required to work within the environment	Increased gross motor control	O'Brien and Murray (2005) Swarbrick, Eastwood and Tutton (2004)
Children are required to handle tools and natural resources	In the pursuit of a task or goal at Forest School, children have the opportunity to make use of their fine motor skills and coordination	Improvements to fine motor stamina and control	O'Brien and Murray (2005)
Children use physical skills continually in the Forest School environment	Continual physical feedback and exercise	Children acquire physical skills (such as strength, balance). They become fitter and begin to show more awareness of the space around them and become more physically self-reliant.	O'Brien and Murray (2005) Lovell (2009a/b)

6. Outcome - Knowledge and Understanding

Context	Mechanism	Outcome	Source
Children are exposed to natural processes and features of a wild outdoor space	Children engage with the world around them and become more aware over time	Knowledge is gained and retained about flora and fauna	O'Brian and Murray (2005) Murray (2003) Manyard (2007a) Ridgers, Knowles and Sayers (2012)
Learning is predominantly child-initiated and elements	Children are eager to discover things for themselves and they acquire an innate	Children learn and recall new facts about the natural environment	O'Brien and Murray (2005)

of the curriculum are presented in a practical context	motivation to learn	Children are keen for their parents to take them out in the 'outdoors' more often to share their knowledge	
Children have time and space to consider problems	?	Children take time over solving problems and are more likely to be successful	Manyard (2007a) Swarbrick, Eastwood and Tutton (2004) Borradaile (2006) Knight (2011b)
Exposure to curriculum areas of maths, science, literacy and language in real-life context	Learning is 'real' and meaningful at that time – abstract concepts become concrete	Children retain knowledge and develop a healthy attitude towards learning	Manyard (2007) Borradaile (2006) Murray (2003)
Child have opportunities to create in the natural environment	?	Creative thinking is enhanced	Borradaile (2006)
Young people are exposed to changes in a natural environment over time and can see the effects they have on it (e.g. plants growing/clearing brambles)	Children take care to note changes and may purposefully watch something over time	Children's observational skills and awareness of the world improves.	Murray (2003)
Opportunities for skills and knowledge gained at Forest School to be linked to other contexts (school/home) e.g. writing about FS	?	Skills, knowledge and understanding are transferred into other contexts	Murray (2003) O'Brien and Murray (2005) Ridgers, Knowles and Sayers (2012)
Skilled adults show children how to complete tasks when are they are interested in	Children see the skills as useful to them and learn the importance of listening	Children learn the skill to a level of maintenance and listening skills improve	Vandewalle (2010) Murray (2003)

knowing			
Practical skill development is made more explicit by adults and is more observable to children than social development	Young people see Forest School as primarily for gaining practical skills	Young people focus on developing practical skills and this dominates their experience of Forest School	Davis and Waite (2005)

7. Outcome - New Perspectives

Context	Mechanism	Outcome	Source
Pupils and teachers interact in an outdoor environment away from the classroom	Pupils and teachers get a better understanding of each other and develop trust	Positive and lasting relationships/friendships are formed. High quality interactions occur and practitioners gain a better understanding of the children (e.g. individual learning styles).	O'Brien and Murray (2005) Swarbrick, Eastwood and Tutton (2004) Roe and Aspinall (2011b)
Pupils and teachers in same outdoor environment	Pupils and teachers face the same challenges, e.g. coping with adverse weather	Relationships are ultimately more positive and understanding	O'Brien and Murray (2005)
There are opportunities to assess children in a different way	Adults see strengths which are not drawn out in the classroom	Adults have a more positive view and wider expectations	O'Brien and Murray (2005) Massey (2004) Borradaile (2006) Murray (2003)

8. Outcome - Ripple effects

Context	Mechanism	Outcome	Source
Opportunities for staff not normally associated with Forest School to observe	A different attitude from external practitioners towards the children	Positive changes in relationships and better understanding of the child's capabilities	O'Brien and Murray (2005)
Opportunities for demonstration of skills and knowledge in different contexts, to parents and other adults	Parents take more interest in Forest School due to children's enthusiasm	Children grown in self-esteem from having their achievements valued by their parents. Families visit woodland settings more often.	O'Brien and Murray (2005) Swarbrick, Eastwood, Tutton (2004)

9. Outcome – Emotional Well-being & Behaviour

Context	Mechanism	Outcome	Source
Regular access to a woodland environment	Environment has a calming restorative effect on the young people	Young person's mood is more positive (as measured by stress, energy, anger and hedonic tone)	Roe and Aspinall (2011a)
Offers a different environment for pupils with conflict at home	Enables children to have a different focus (non-effortful attention)	Enhances resilience by reducing the impact of conflict in the home	Murray (2003)
Opportunities for repetitive physical activity, e.g. whittling sticks, hitting sticks	Children can begin to use this as a 'coping strategy' to help them regulate their emotional state and release adrenaline	Children use coping strategies to deal with anger so reduce episodes of challenging behaviour	Murray (2003) Roe and Aspinall (2011a)
Pupils are involved in creating the rules and can see why those rules are in place (safety reasons)	Young people understand the rules and boundaries and the reasons for them make sense	Children follow the rules of the setting and feel safe and calm. Fewer exclusions occur and attendance improves.	Murray (2003) Archimedes Training (2011a) Ritchie (2010)

10. Hindering Factors

Context	Mechanism	Outcome	Source
Bad weather conditions	Staff don't want to go to Forest School	Forest School is cancelled or staff are not enthusiastic so children don't enjoy it as much	Swarbrick, Eastwood and Tutton (2004)
The rules at Forest School are different to school and staff may allow behaviours which would not be acceptable in school	Some members of staff consider Forest School to be inappropriate due to children having little consistency in terms of behavioural expectations	Tension is caused between Forest School staff and school staff which may threaten the programme's ability to continue	Davis and Waite (2005)
Environment is new and some children may lack experience in a woodland setting	Children might feel frightened of the risks at Forest School (e.g. using knives and lighting fires) and the lack of visible boundaries	Children experience a negative emotional response (fear) and may not want to attend Forest School	Davis and Waite (2005)

Future development:
Access for wheelchair users (Swarbrick, Eastwood and Tutton, 2004).
Need for policy makers to have a strategic overview and plan of how Forest School will be used (Borradaile, 2006)
Children benefit from more than 14-weeks of the programme (Archimedes Training, 2011)

Appendix 8.3 Ethics Committee Approval

Dear Laura Southall,

Ethics Committee Review

Thank you for submitting an account of your proposed research 'Using Realistic Evaluation to evaluate "Forest School" with young people attending specialist secondary provision'.

That research has now been reviewed, to the extent that it is described in your submission, we are pleased to tell you it has met with the Committee's approval.

However:

Please note the following comments from our reviewers;

1. The Information Sheet and Consent form should both be on Headed paper - either University headed paper, or (employing) Local Authority headed paper. Both should include full contact details for the researcher, and for both University and Local Authority supervisors.

2. Also - a small point - would it not be the case that data would be securely stored for 'a period of time' (i.e. 'x' years) before being deleted, rather than being 'deleted once the research has been written up' (I presume this means once the thesis has been completed - data will, of course, be important in the subsequent writing up of the research for publication).

Final responsibility for ethical conduct of your research rests with you or your supervisor. The Codes of Practice setting out these responsibilities have been published by the British Psychological Society and the University Research Ethics Committee. If you have any concerns whatever during the conduct of your research then you should consult those Codes of Practice.

Independently of the Ethics Committee procedures, supervisors also have responsibilities for the risk assessment of projects as detailed in the safety pages of the University web site. Ethics Committee approval does not alter, replace, or remove those responsibilities, nor does it certify that they have been met.

Yours sincerely

Dr Alan Sunderland
Chair, Ethics Committee

Appendix 8.4 Information Sheets and Consent Forms

INFORMATION SHEET – FOREST SCHOOL RESEARCH (parents/young people)

Dear Parent,

I am a Trainee Educational Psychologist at the University of Nottingham, undertaking a research study on Forest School whilst on placement with X County Council. The study will form part of my course requirements, whilst being of interest to me and the Local Authority. Due to your child's participation at Forest School, I am writing to ask for consent for your child to be involved in this study, which aims to understand the effects of Forest School on young people's development.

Through partnership with Oak School and Crow's Wood, I aim to gain the views of your child, yourselves, teaching staff and Forest School leaders about how Forest School may have brought about any changes for your child. I aim to collect information through attending Forest School sessions, informally speaking with your child and giving questionnaires to school staff, Forest School staff and yourselves. The questionnaires will be no longer than two pages and the discussion with your child will be at Forest School alongside the activities, taking no longer than 20 minutes.

As you will be aware, Oak School will be moving to a new site which will have its own Forest School. This research will therefore aim to help develop that site through knowing what the key factors for a Forest School are.

If you are happy for your child to participate in this study, please sign and return the consent form attached as soon as possible (before 30th April 2013, please). I would also be very grateful if you could discuss this with your child and ask them to sign the letter if they agree to be involved. I would like to use photographs in the report write up to 'bring the study to life' and record what your child says at Forest School to ensure I gain their views accurately, however I will only do this with your explicit consent. All of the information I gather will be kept confidential, anonymous and in a locked place during the study. Any recordings of your child will be deleted once the study has been written up and the questionnaires and any notes from observing at Forest School will also be destroyed after 2 years.

If you allow your child to participate, you still have the right to withdraw them from the study at any time, without giving a reason. All of your child's information will be confidential and names will not be included in the final report write up. The finished results of the study will be made available to you and the school.

If you require any further information on the study, please feel free to contact me or my supervisors, using the details given below.

Thank you in anticipation,

Yours sincerely,

Laura Southall.

CONSENT FORM (parents/young people)

Using Realistic Evaluation to evaluate 'Forest School' with young people attending specialist secondary provision.

Investigators: Laura Southall and Dr Nick Durbin
School of Psychology, University of Nottingham.

Please circle as appropriate.

Have you read and understood the participant information sheet?   YES/NO

Have you been given an opportunity to ask questions and discuss the study?   YES/NO

Have any questions been answered satisfactorily?   NOT APPLICABLE/YES/NO

Have you received enough information about the study?   YES/NO

Do you understand that you are free to withdraw your child from the study:

at any time?   YES/NO

without giving a reason?   YES/NO

Do you agree to your child taking part in this study?   YES/NO

Does your child agree to take part in this study?   YES/NO

In order to bring the Forest School experience to life when reporting the results, I would like to include photographs of the site and activities on offer.
Do you consent to photographs of your child engaging in activities at Forest School to be included:

in my research write-up?   YES/NO

in other publications?   YES/NO

If you child agrees to speak to me about Forest School, do you give consent for this to be recorded?   YES/NO

Do you agree to your child's teacher completing a questionnaire about any changes they have seen since beginning Forest School? Any completed questionnaires will be made anonymous, locked away and destroyed after analysis.   YES/NO

"This study has been explained to me to my satisfaction, and I agree that my child and I will take part. I understand that I am free to withdraw consent at any time".

(Parent)
Signature: Date:
Name:

(Young person)
Signature: Date:
Name:

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INFORMATION SHEET – FOREST SCHOOL RESEARCH (teaching staff)

Dear Sir/Madam,

I am a Trainee Educational Psychologist at the University of Nottingham, undertaking a research study on Forest School whilst on placement with X County Council. The study will form part of my course requirements, whilst being of interest to me and the Local Authority. Due to your involvement with the education of the young people accessing Forest School, I am writing to ask for your consent to be involved with this study, which aims to understand the effects of Forest School on their development.

Through partnership with Oak School and Crow's Wood, I aim to gain the views of the young person, their parents, yourselves and the Forest School leaders about how Forest School may have brought about any changes for the young people. I aim to collect information through attending Forest School sessions, informally speaking with the young person and giving questionnaires to parents, Forest School staff and yourselves. The questionnaires will be no longer than two pages and the discussion with the young person will be at Forest School alongside the activities, taking no longer than 30 minutes.

As you will be aware, Oak School will be moving to a new site which will have its own Forest School. This research will therefore aim to help develop that site through knowing what the key factors for a Forest School are.

If you are happy to participate in this study, please sign and return the consent form attached as soon as possible (before 28th March, please). During the study, the questionnaires will be made anonymous, confidential and kept in a locked filing cabinet. Once the research is written up the questionnaires will be destroyed and all data will be reported anonymously. **I will only ask you to fill in a questionnaire about a young person if their parents have given explicit consent for this.**

Even if you consent to participating now but do not want to fill in the questionnaires once you receive them you can withdraw from the study at any time without giving a reason. The finished results of the study will be made available to you and the school.

If you require any further information on the study, please feel free to contact me or my supervisors using the details given below.

Thank you in anticipation,

Yours sincerely,

Laura Southall.

Doctorate in Educational Psychology Student

CONSENT FORM (staff)

Using Realistic Evaluation to evaluate 'Forest School' with young people attending specialist secondary provision.

Investigators: Laura Southall and Dr Nick Durbin
School of Psychology, University of Nottingham.

Please circle as necessary.

Have you read and understood the participant information sheet?   YES/NO

Have you been given an opportunity to ask questions and discuss the study?   YES/NO

Have any questions been answered satisfactorily?   NOT APPLICABLE/YES/NO

Have you received enough information about the study?   YES/NO

Do you understand that you are free to withdraw from the study:
                                         at any time?   YES/NO
                                         without giving a reason?   YES/NO

Do you agree to taking part in this study, by completing a short questionnaire? YES/NO

"This study has been explained to me to my satisfaction, and I agree that I will take part. I understand that I am free to withdraw consent at any time".

(Staff)
Signature: Date:

Name:

(Researcher use only)
I have explained the study to …………………………… and they have given their informed consent to participate.

Signature of researcher: Date:

CONSENT FORM (senior staff)

Using Realistic Evaluation to evaluate 'Forest School' with young people attending specialist secondary provision.

Investigators: Laura Southall and Dr Nick Durbin
School of Psychology, University of Nottingham.

Please circle as necessary.

Have you read and understood the participant information sheet?   YES/NO

Have you been given an opportunity to ask questions and discuss the study?   YES/NO

Have any questions been answered satisfactorily?   NOT APPLICABLE/YES/NO

Have you received enough information about the study?   YES/NO

Do you agree to allow the researcher access to the site in order to distribute consent forms, questionnaires and to observe and interview the young people?   YES/NO

"This study has been explained to me to my satisfaction, and I agree that I will take part and grant Laura Southall access to participants, pending their consent. I understand that I am free to withdraw consent at any time".

(Staff)
Signature: Date:

Name:

(Researcher use only)
I have explained the study to …………………………… and they have given their informed consent to grant access.

Signature of researcher: Date:

Appendix 8.5 Treatment Validity Checklist for the Case Study Forest School

Principle 1	Notes from observation and discussion with Forest School leaders on 22nd May 2013
Principle 1: Forest School is a long-term process of frequent and regular sessions in a woodland or natural environment, rather than a one-off visit. Planning, adaptation, observations and reviewing are integral elements of Forest School.	Principle met – see notes below.
• Forest School takes place regularly, ideally at least every other week, with the same group of learners, over an extended period of time, if practicable encompassing the seasons.	Each pupil attends Forest School for a full day every week of term time. The Year 11 students have done this for almost two academic years and the Year 10 students for one.
• A Forest School programme has a structure which is based on the observations and collaborative work between learners and practitioners. This structure should clearly demonstrate progression of learning.	I saw the Forest School leaders and pupils collaborative decide upon the activities to do that day. This was partly based upon the learner's own interests and partly recommendations of the adults about what needed doing in order to maintain the site.
• The initial sessions of any programme establish physical and behavioural boundaries as well as making initial observations on which to base future programme development.	Forest School leaders spend time in the initial sessions setting boundaries and discussing health and safety. They are consistent in that if pupils are unsafe with tools, for example, they are not able to use them until they can demonstrate safe use. The Forest School leaders use these sessions to decide which OCN modules would be most appropriate, and ask the pupils for their view on this.

Principle 2	Notes from observation/discussion on 22nd May 2013
Principle 2: Forest School takes place in a woodland or natural wooded environment to support the development of a relationship between the learner and the natural world.	Principle met – see notes below and photographs.
• Whilst woodland is the ideal environment for Forest School, many other sites, some with only a few trees, are able to support good Forest School practice.	This Forest School is set within approximately 100 acres of mature and new woodland. Many varieties of tree exist here, enabling the pupils to learn about the properties and uses of these trees. The pupils often used hazel, willow and silver birch for their projects.
• A Forest School programme constantly monitors its ecological impact and works within a sustainable site management plan agreed between the landowner/ manager, the forest school practitioner and the learners.	I observed the learners being asked by the Forest School leaders how they wanted their site to look. As the woodland is so large, each group can have their own site which is not accessed by other people. The Forest School leaders make the pupils aware of their ecological impact and the pupils engage with this by picking up their litter, for example. They adhere to a long-term site management plan.
• Forest School uses natural resources for inspiration, to enable ideas and to encourage intrinsic motivation.	I saw wood being used for a variety of purposes including making a model pig, making a birdbox and peeling for firewood. The whole group worked together on the model pig idea to achieve their goal.
• The woodland is ideally suited to match the needs of the programme	Learners have access to a large woodland space which they are trusted to explore and discover

and the learners, providing them with the space and environment to explore.	independently. The woodland environment enables the programme criteria to be met, including the OCN criteria.
• Forest School aims to foster a relationship with nature through regular personal experiences in order to develop long-term, environmentally sustainable attitudes and practices in staff, learners and the wider community.	Staff model environmentally sustainable attitudes and an appreciation of natural resources. The environment enables the young people to have regular experiences in nature.

Principle 3	Notes from observation/discussion on 22nd May 2013
Principle 3: Forest School aims to promote the holistic development of all those involved, fostering resilient, confident, independent and creative learners	Principle met – see notes below
• Where appropriate, the Forest School leader will aim to link experiences at Forest School to home, work and /or school education	Pupils undertake work in school drawing on their experiences at Forest School, for example art work and writing. Pupils have been known to make articles at Forest School such as chairs and bird boxes for family members.
• Forest School programmes aim to develop, where appropriate, the physical, social, cognitive, linguistic, emotional, social and spiritual aspects of the learner	Pupils are physically active and engage appropriately with their peers. They have been heard using environmentally – specific language and also language which requires detailed explanation and subject-specific terminology, particularly maths and science. When upset, pupils can be left to reflect quietly and speak to an adult if they would like, with the time to do this and space away from other learners who may have become disrupted in a classroom environment. I noted that the Forest School leaders were committed to developing the pupil's independence and often refrained from giving them the answers to questions or doing things for them.

Principle 4	Notes from observation/discussion on 22nd May 2013
Principle 4: Forest School offers learners the opportunity to take supported risks appropriate to the environment and to themselves.	Principle met – see notes below
• Forest School opportunities are designed to build on an individual's innate motivation, positive attitudes and/or interests.	Pupils have the opportunities to direct their own learning according to their interests and motivation. Forest School leaders support this by modelling techniques or activities.
• Forest School uses tools and fires only where deemed appropriate to the learners, and dependent on completion of a baseline risk assessment.	At the beginning of the term there is a meeting between school and the environmental center to discuss a risk assessment according to the pupil's needs and the Forest School site. Risk assessments are in place for fire and tool use, amongst other activities.
• Any Forest School experience follows a Risk–Benefit process managed jointly by the practitioner and learner that is tailored to the developmental stage of the learner.	Forest School leaders manage risk-benefit while in the wood and formally through risk-benefit analyses (see associated documents in appendix). For example, KS2 learners have only recently started using fire as it was deemed unsafe initially.

Principle 5	Notes from observation/discussion on 22nd May 2013
5. Forest School is run by qualified Forest School practitioners who continuously maintain and develop their professional practice.	Principle met – see notes below
• Forest School is led by qualified Forest School practitioners, who are required to hold a minimum of an accredited Level 3 Forest School qualification.	Both Forest School Leaders have completed Level 3 Forest School leader training. They both also hold a food hygiene certificate and paediatric first aid. One Forest School leader is continuing his professional development through a Bushcraft course. Another has an advanced positive handling certificate but reports he's never had to use it at Forest School.
• There is a high ratio of practitioner/adults to learners.	For the Year 11 group, there is a ratio of 2 adults: 5 learners. For the Year 10 group, there is a ratio of 3 adults: 5 learners.
• Practitioners and adults regularly helping at Forest School are subject to relevant checks into their suitability to have prolonged contact with children, young people and vulnerable people.	All adults present have up to date CRB checks.
• Practitioners need to hold an up-to-date first aid qualification, which includes paediatric (if appropriate) and outdoor elements.	See above – both Forest School leaders have up to date Paediatric first aid qualifications.

• The Forest School leader is a reflective practitioner and sees themselves, therefore, as a learner too.	Both Forest School leaders were interested in developing their skills, both with working in a woodland environment and with children who have additional needs. They will undertake their own projects at Forest School and discuss any issues they are having with the pupils as they go along.
• Forest School is backed by relevant working documents, which contain all the policies and procedures required for running Forest School and which establish the roles and responsibilities of staff and volunteers.	All paperwork is in place. See documents in appendix for examples.

Principle 6	**Notes from observation/discussion on 22nd May 2013**
6. Forest School uses a range of learner-centred processes to create a community for development and learning	Principle met – see notes below
• A learner-centred pedagogical approach is employed by Forest School that is responsive to the needs and interests of learners.	Learners are not pressured into any activity, but staff create a culture of motivation and interest through working on effective and inspiring projects themselves.
• The Practitioner models the pedagogy, which they promote during their	Forest School leaders see themselves as learning partners who are open to developing trusting

programmes through careful planning, appropriate dialogue and relationship building.	relationships with the young people. This is evident in the way in which they speak to them, often using humour. Both Forest School leaders put great emphasis on the importance of relationship building.
• Play and choice are an integral part of the Forest School learning process, and play is recognised as vital to learning and development at Forest School.	Young people were seen playing with a rope swing in the woodland.
• Forest School provides a stimulus for all learning preferences and dispositions.	The availability of the natural environment an choice in activities enables all learning preferences to be catered to. The Forest School leader attached to the school talked about wanting to extend the experience for all pupils, including those with physical disabilities.
• Reflective practice is a feature of each session to ensure learners and practitioners can understand their achievements, develop emotional intelligence and plan for the future.	Each session contained opportunities to reflect on their achievements so far. Plans for the future were discussed, in relation to the young people currently attending Forest School and those who had since left.
• Practitioner observation is an important element of Forest School pedagogy. Observations feed into 'scaffolding' and tailoring experiences to learning and development at Forest School.	Forest School leaders spent time observing the young people during their activities. This can occur independently or together, in order to triangulate their observations. They report on their engagement after each session.

Appendix 8.6 Framework used - Purpose of Piloting Semi-Structured Interviews

1.	Are the questions accessible and understandable?
2.	Are the questions leading?
3.	Have I missed any key areas of development?
4.	Are there clear links between the questions and areas of development of interest?
5.	Are all questions open?
6.	How are the researcher's interviewing skills?
	Were you made to feel comfortable and informed?

<u>**Appendix 8.7 Semi Structured Interview Transcripts with Forest School Staff**</u>

<u>**Participant A (Forest School Leader)**</u>

1. Introductory explanation – Thank you for agreeing to be interviewed for this study. I am interested in your views about the Forest School programme and how it works. There are no right or wrong answers, and please answer as honestly and freely as you can. I am trying to get information about exactly what you think is happening at Forest School so please, feel free to take your time and consider your answers. You will not be identified as having been involved. Can you confirm for the record that you have given your permission for this interview to be recorded? **Yeah, not a problem.** Thank you.

2. How long you have been involved with a Forest School programme?
Um…Forest School, I trained about 4 years ago, and got my level 3 er Forest School practitioner award but I've been working here for…6 ½ years so I was involved in the same sort of work for those couple of years before I did the training, which is how I got into going to do the training. Right, that was my next question, so you were already involved and you felt it was the next step really, to run it. **Yeah.** Ok, and what experience do you have with pupils with special needs? **Erm, I've been working with them since I first started working here so, er, I was thrown in right at the deep end, no training, no nothing, just go and work with some other people that were here. My wife was here at the time, she's had training, she was working part-time somewhere else, part-time here, so we ended up with, I think it was 13 pupils I think it was four staff and erm, we were told they were all mainstream but they obviously weren't, because it was an all-inclusive so nobody's special needs but there were autism, Asperger's, all sorts of stuff in there, so right from the word go when I started here, I sorted of picked it up from people as I've gone along and then just got on with it.** And age ranges, has that mainly been secondary? **It's mainly been secondary, yeah. There have been some, erm, I don't do early years, I've helped out on a few bits with early years erm when Forest School initiative was here erm, during the holidays but predominantly secondary. It's just been this year we've started working with some of the um, junior schools, from X school.**

3. What, in your view, are the aims of Forest School?
Erm, it's to promote, as far as I'm concerned, er ==confidence== (1a), ==And you go with the flow, if one of the students, one of the kids has got something they're interested in and you've got something else in your head you go with what they've got in their head and work with that as if you've got them hooked on something then they're more likely to gain the confidence to go on and try something different== (1d). **It's confidence and self-esteem is the main thing for me, personally. Ok, thank you.

4. What do you think are the distinctive features of Forest School which enable these aims to be met?
==**It's student centered, student led, it's not prescriptive, its not school environment, it's not 'this is what we're doing today' because I've got to**==

tick these boxes at the end of the day. I haven't got any boxes to tick at the end of the day; I can tailor what they're doing to match any criteria for any qualifications so it's just student led and go with the flow [(1d)]**.** And thinking about the environment…? **it's not school environment there's no walls, there's no ceilings** [(1f)]**, they're not feeling trapped because you you put somebody in a classroom and close the door behind them, it's just like, some of them are like caged animals when you do that** [(9i)]**, when you bring them out here they've got the space, they can see what's around them, and it just completely changes most kids' moods, I have to say** [(9a)]**. Behaviour, some of the behaviour I've been told that's going on in schools with some of the kids I've worked with over the years, I find it difficult to believe with what they're like out here.** A big change? **Massive, yeah** [(9i)]**.**

5. What, in your view, could be factors which stop those aims being met?
   Erm, yeah. Erm, a lot of the kids come from very abusive, disruptive backgrounds and I get kids that come here in the morning and they can't concentrate on anything because they're starving, they haven't slept properly, they haven't eaten properly, they're nicking stuff from the shops on their way here to-just so they've got something to eat something to drink. So, things like that do make a huge different to erm the attitude that they turn up with in the first place which is why we started um making sure we put drinks and stuff on for them first thing in the morning. I always put a tea box together and there's always a pack of biscuits or something so they'd get a drink to start with [(2g)] **and it's just that sort of chilled atmosphere to start with so when they've had a really crap time of things you can sort of hopefully sort of focus on them a bit more and give them time to chill out and just get into the feel of it really** [(4d)]**.** So some of the factors are to do with the individuals coming to the programme? **Yeah. Yes it's their background and some of that will, er there was one lad last year and a bit the year before, couldn't cope with fires um because he was abused with fire and burnt at home so, a lot of things like that you try and just work round it** [(11d)]**.** So you just let him stand back? **Just let him stand back and eventually, I mean we got him doing some cooking on a fire and everything but it took a year, this isn't like 'you're gonna do this in the next couple of weeks'** [(1b)]**. One lad the second year I was working here, um, behaviour difficulties, serious behaviour difficulties, er criminal record as long as your arm, drink and drug abuse and it took him 2 years before he could actually settle down, feel comfortable to do something** [(11b)] **and it was the last couple of weeks in the last year aswell when it just sort of clicked and got through to him, it's not a quick fix** [(1b)]**. But, it's something that you need to give them the time because they need to feel comfortable in the surroundings** [(4d)] **and if they're not used to being treated like that, or given any time and being listened to then it's completely alien for them and it takes them a while to get their mindset into it because they just think 'what do you want?', yeah, 'what are you after?' Because that's their experience** [(7d)]**.**

6. What other forms of outdoor learning have you experienced or been involved with, if any? **Um, trying to think now, not a huge amount, it's mainly been since I've done Forest School. Erm I've done some of the conferences for**

Eco schools and stuff like that when we get the school groups come here with their teachers but that's just a little workshop, and then they go away again. Erm, but I'm trying to bring more elements, with the older kids especially, more elements of bushcrafts into it the natural environment and what you can and can't do to look after it (10c). Right, so in terms of other experiences you've had that's not been Forest School, how does does Forest School compare to this?

Um, I think the whole, I mean I've never been into schools to sort of, just looking back at my experience which was pretty crap to be fair, so the whole Forest School thing in comparison, um I personally think it works but the schools need to be aware that they need to give it time, they can't send kids out; it's like there's a bunch of naughty kids from a class, send them for a term and see what happens, it doesn't work like that. It needs to be ongoing? **It needs to be ongoing (9a) and I've been saying for years and it's started feeding back last year and this year when we've got the younger groups from X, it's no good giving them to me in year 10 and 11 because they've got loads of problems stored up and loads of damage done when they're younger and if you can get them younger and work them through…because Forest Schools predominantly early years, then you get the little kids out, they go and play in the woods and they don't come out again unless they've been kicked out of school into a special school or in a PRU or there are problems and schools want them gone and they come out then and there's a massive gap in the middle. Um, now we're getting them a little bit younger I can see I'm going to have a few of these kids later on as we go through but hopefully they'll already feel at home out here and erm they'll be able to sort of just go with the flow and fit in and know a little bit more about what they want to do, rather than just saying there's a year 10 group, you've got them for the year, I want x, y and z off you because that's what the school needs for their OFSTED report, for their league tables. It's… forest school in comparison to school I'd say it's much more laid back in the fact that there's no, you don't go round calling everybody sir, it's all first name terms (7e) and you have a laugh and you have a joke and there's no hard and fast rules (9d). Certain amounts of swearing we put up with as well as long as it's not directed at anybody for bullying (9e). You've got to pick your battles so you can win the war at the end of it, there's no good being in a school saying 'what did you say, get out' and deal with them, because it don't work, not with these sorts of kids (7e).**

7. How important on a scale of 1-10 do you think the role of Forest School is leader to the programme success? **Oh it's way up there, yeah, it's got to be a 9 or a 10 at least because you, if you're not focused on what the forest school ethos is, you're just a teacher outside and it don't work (10c).** If you were involved in the recruitment for another Forest School leader, what kind of skills, experience and personal attributes would you be looking for in that person? **They can…It might not necessarily need to be already qualified as a Forest school leader but you need the experience of working with kids um, and not necessarily in a school environment, outside of the school environment where you're allowing them certain types of freedom to experiment and explore and stuff (1f). That would be good. Erm, but I**

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think you also need to see somebody in action to gain that as well. So to observe somebody out here doing it? **Yeah, it's really difficult though, sitting down talking to somebody to find out, I've worked with a few people that have been employed over the years to come and help me and er they've been brilliant at interview and you get them out in the woods and it's like this is what you're doing today and it's like, no, it don't work like that. They've got this idea in their head of what they want to do for that day and the kids are completely switched off because they're being told what to do (4b).** So it's somebody who can step back? **Yeah, you need to step back. A lot of the time, me and R have said this before, if the powers that be at the schools could come out and see what we do, they'd be giving us a right telling off thinking 'what the hell are you playing at, what are you doing, they're running riot they're doing this, they're doing that, you're sat on your backside all day just sorting the fire out (4a) doing some whittling' (9c). But we're not, we're giving them the space to be kids again, and the space to explore (4b) and if they've got questions they come back and ask (3b) and then that's when you can step in, you can start pushing in that direction, then they're learning. I always say they're learning without realising they're learning (3g). That's what I always think.** So somebody who can let that all happen? **You've got to - we've had teachers come out with the groups and they're like 'no, no what are you doing, come here sit down', but just leave them alone, let them get on with it (10c).**

8. What helps a Forest School leader run a successful programme? What hinder them? (summarise – check if correct and ask if they want to add or change) **um, you need the school's idea with, the classes idea with always come out with a member of staff from the school, that member of staff from the school needs to be clued up about what Forest School is (10b). Cuz that can be a big drawback if you've got somebody, somebody erm who doesn't like being outside and out in the woods I've had that before now they've sat down all day and not said a word. They really didn't want to be there (11a), or like I've just said you get um, a conditioned TA comes out, conditioned by the school and the teachers it's like you've gotta do this you've gotta do that, you can't say this, you can't do the other. They can be problems (1d).** So that's sort of thinking about hindering isn't it. **Yeah.** So it's about who else is coming out with you? **Yeah er, also, um trying to think, you need to be given a certain amount of autonomy to get on with it yourself. You don't want your bosses on our back all the time, um, I'm quite lucky I get that here. Um, I think I'm getting it more and more because what I'm doing is working but you do need somebody, if it's not working it's pretty obvious with the reports that are going back and the feedback that is coming back from the school but erm…you need to be able to pretty much be self-sufficient when you're out there you can't be running back up to the center or back up to wherever you are thinking oh I need this I wanna get that it's like well if we haven't got that today so we'll deal with it and we'll look at it next week (10a).** So you need the support of the senior leadership from the school and from the center aswell? **Definitely, yeah.**

9. In your opinion, what effect does Forest School have on the young people involved? You've talked about confidence and self-esteem, are there any other effects you can think of? Can you give me some examples to illustrate your thinking, please?

Erm, well they have knock on effects onto everything. It's quite a big question. **It is a big question. Erm... a lot of the students are gaining tool skills (6b) as well which they can then take on into further education if they're going onto college (6g),** um, cuz we do, I mean I know the pure Forest School for the early years you take practically nothing out with you and find what you've got there but with the older ones erm **you've got to take tools and stuff out because they want to make stuff they want to be doing stuff (6b),** so it might not be pure forest school as some people see it but it's the pure Forest school ethos and, erm, I've forgotten what the question was! Just, in your opinion what effect does Forest School have on the young people? **Right, yeah, so they gain extra tool skills with tools that they'd probably never have used if they were in a normal workshop (6j) in schools or even going into college. Erm, they're learning about the environment and how to look after it and what works and what doesn't work out there (6a), so it's good and bad practices. So that sort of thing goes back into um, it can even go back into gardens in their houses and stuff and how they're looking after, if they've got trees and stuff, a lot of people have hazels and willows in their gardens (6g), and we do coppicing a huge amount of times, we get resources so we're teaching them about how to look after the environment, they think we're destroying it by cutting it down but what they're actually doing is managing the woodland and managing the resources so we've got more for later (6a). Erm, the confidence thing, um, I had one lad who was out here for 3 years, and erm, he was an absolute nightmare when he got here and he's now he's actually done the forest school level 1 qualification, he's the only student to have achieved that one and he's a young firefighter as well, hoping to go into all of that. And he's put all of that down to being about to come here and just gain his confidence and self-esteem to move forward (1a).**

10. Would you expect to see all of these effects (summarise outcomes from Q9) for every child that comes?

No, not at all. What do you think any differences might be based on? **Erm, the first half term of the year you tend to change, we do have a bit of a change in the students, um they might send us 4,5,6 kids out to start with and you might end up losing one or two in the first 6 weeks cuz some of them aren't suited to being outside, they don't like being outside, so sometimes in that first 6 weeks it can be a bit of a transition period and we do sort of sometimes swap the students round (11d).** Right, so it's something about what that individual is bringing, their personality, their likes? **Yeah, sometimes they just don't like being outside, sometimes they don't like not having boundaries, it doesn't work for everybody. Um, but those that do like it and stick it do sort of get on quite well I think and get quite a lot of out of it (11d).** Right so do you think that for those it does work for, do you see different effects in different children sometimes or is it all generally the confidence, the self-esteem? **Um, It does depend on what they bring, it**

depends on their attitude as well **(11d)**, um, we do tend to start seeing um the kids helping each other more which is really cool, they get here at the beginning and then er, a lot of them are street wise and really don't give a damn about anything but themselves because that's what they've had to do to survive on the streets, whether they've been kicked out of home or whatever, and erm, some of them you'll just they'll end up, even if it's just making a drink for somebody or helping somebody when they're making something, you can see a change that way where they're getting a bit more socially aware **(2b).** So, there's opportunities for pro-social behaviour? **Oh yeah, absolutely, yeah.**

Ok, thank you. I've been reading a lot of the existing research around Forest School which, as you've hinted at already, is most often with younger and early years children. It does talk about some common themes or outcomes, some of which you've already mentioned (if they have). I would really like to explore these areas in more detail with you please, and find out whether you think these effects for young children are the same or different to what you have seen happening for your group.

11. Do you think going to Forest School affects the confidence of these young people? If so, how?
    They're just able to explore and experiment (4b), and they need to be given um, they need to be allowed to be given a certain amount of risk to take this risk. I mean, everything - it's a managed risk, because obviously we risk assess everything, we have to. But you have to let them take these calculated risks so that… that is a massive step in their self-confidence and self-esteem side of things as well. If they do that and they think I can do that, it sort of snowballs on from that (1e).

12. Do you think there has been any impact upon their social and emotional development? If so, how?
    Yeah, definitely. We get um, I've had students come in and we've been told they're selective mutes and by the end of it you can't shut them up, because they're just, they feel more socially, I don't know, accepted or connected with everyone in that group because they come for the year so they're all in there together (3e) and they have to work together to build the site so you've got that social group (2a). You've got the pecking order and it all starts off at the beginning, your hierarchy from whoever was sort of at the top at the school and it changes, because somebody might be really quiet might be at the bottom of the pecking order and they might be able to sit down at Forest School and just be brilliant. They'll sit down and whittle and carve and then all of a sudden the pecking order changes, people start talking to each other more and they all start getting on a bit more. Yeah, it definitely works on the social side (2i).

13. You mentioned about language there - any impact on language and communication skills? If so, how?
    Yeah, erm, language, sort of some of them I've been told their language is appalling in school and there's one group I've been working with this year I didn't hear a swear word for the first two terms when they were

out here, which is quite bizarre. Have you got any theory about what's happening there? **No idea what's going on there, no idea. But the summer term, this last term, whether they were just feeling more settled more confident or what I don't know we started getting a bit more language out of them. But again, that was just, instead of jumping on them again, it was playful banter they weren't having a go at anybody. So, to a certain degree you let it go, when they start getting personal that's when you have to step in. Absolutely <mark>(9e)</mark>.**

14. Any impact on motivation and concentration? If so, how?
    Yeah, er it does improve motivation and concentration <mark>(4b)</mark>. Erm. How do you think that's happening? **Well if they're finding something that they like to do and they want to do then erm and they're being allowed to do it, they're being allowed to do it in their way, as long as you make sure they're safe, then they're not being told what to do and how to do. So again even with that, I'm thinking whittling, I've had students come in and they've sat there for the whole day just with a knife and a piece of wood and they'll be carving stuff. I've had students come in and say right let's go coppicing let's do this, and they'll sit there and before you get to the end of the day, they've practically made a chair, because they just want to do it and they're allowed to do it their way, their style and in the order they want to do it <mark>(4b)</mark>.** So they'll persevere for hours on end? **Yeah. Absolutely <mark>(4b)</mark>. You do get some that really can't be bothered and some of them think it's just a doss in the woods and they'll go and sit down and do nothing. But I've had students do that before but they've had good reason to because of the abuse they get at home and it's a sanctuary for them. So you've got to try and weigh up - it's different for every kid <mark>(11h)</mark>. So, we get a little bit of background information on each student before they start which gives me a rough idea of where we're at um, academically or not and if there's any triggers, if there's any um alcohol or drugs problems, stuff like this, any medical issues so you can sort of gauge, have a rough idea <mark>(10b)</mark>. Obviously when they get out here it's a different environment - they can be completely different people but you can use that to gauge how you need to sort of treat the kids. I have had um, not so much the schools but definitely the PRUs turn round and say we're not giving you that information, you don't need to know, all you're going to do is use it to pigeon hole them. When what I do is completely the opposite, if I get information which says they've got issues, they've got problems, I know, I can use that to work with them, and not work against them. For instance, I wasn't told one kid was in care or didn't have a mom, she'd died the year before and we were sat out here asking him about 'oh what are you doing when you get home, is your mom cooking you tea?' All this that and the other. They didn't tell me until after he left, I was disgusted. Information like that you need to know cuz that can really set a kid off. But they just thought no, you don't need to know, just get on with it. Which is wrong, in my opinion <mark>(11d)</mark>.**

15. Has it had any implications for their physical skills? If so, how?
Definitely with um hand-eye coordination [(5b)], gross motor skills with the kind of work we're doing, definitely improves. Erm, they get a bit physically stronger some of them as well cuz they have to push wheelbarrows and bring their own tools around, they have to go and coppice and cut their own materials and drag it all around [(5a)]. They're physically working a lot of the time, splitting firewood so it does have a… and I think that's good as well a lot of them just sit on their backside playing computer games til 4 in the morning and just turn up knackered, but they need to do some physical exercise [(5c)]. So it's about that opportunity to be outside all day? **Yeah, yeah we don't beast them into doing it all but if they want to make something they've got to get the materials.**

16. Has their knowledge and understanding of the world been affected? If so, how?
Erm, yeah. Ah. It's quite a bizarre one that, you do get kids cuz, year 10 especially year 11s sort of big fish in a small pond syndrome and all of a sudden they're leaving to move on and you're like, they're talking about this that and the other and you just think well, actually, do you think that's going to happen or do you think something like this might happen: you're going to move into college, you'll be the youngest one there, and erm, how did you feel when you went into school? You have to sort of give them – we try to give them or I try to give them a bit of a… reality check on to what they're going to expect because if they're… if a lot of them disappear out into the big bad world with the attitude they've got they're going to get eaten alive [(6k)]. So there are opportunities for you to discuss the future…**yeah, we talk about all sorts of stuff. If they want to talk or they've got issues about anything we can sit there and talk [(6k)]. Erm, obviously there's issues with disclosure, if there's I mean if I'm being told something that…um and somebody's being put at risk then I've got a duty to disclose that but generally, I mean if they talk generally about stuff and there's nothing specific then there's nothing for me to disclose, we can sort of talk around it and still get through.**

17. Psychological well-being is linked to happiness, satisfaction with one's life and the absence of mental health problems. Do you think Forest School has had any impact upon the young people's psychological well-being? If so, how?
Erm, I think it must have had, even in a, just a small way possibly. If they know they can come here and it's even just for a few hours a week, it's a safe haven if, to get away from all the- whatever's going on at home or going on at school. That, I've seen that and they'll just I mean some of the kids will come out and they'll be able to relax, some of them will go to sleep out here cuz they can relax and they've not being able to relax at home [(9b)]. So, some of them, also it helps them cope a little bit better because they know they can achieve stuff here so they know that, if they want to they can achieve stuff some where else as well. So, but if they apply themselves here and do that they know they've got to apply themselves in other things that they want to do and then they can achieve, to a certain degree anyway [(1a)]. So you're saying there are some sort of ripple

effects going on there into other areas of their lives? **I think so, yeah, yeah, I think so, yeah.**

18. Are you aware of whether the Forest School experience has impacted upon any other areas of the child's life? If so, how?
    Erm, there's the um sort of significant other, if you like. The adult er, what's the word I'm looking for. Positive role models (9h). Can you tell me a bit more about that? **Well, if they've not got positive role models at home, which a lot of them haven't, they're from broken families then, then if you can, I mean you're not sort of stepping in and filling the gap but if you can show them that not all adults are gits, if they've been if they've been abused physically, if they've just been neglected, whatever, if you show them that somebody's going to listen, somebody's actually going to care about something, then you can be that sort of significant other, that um that positive adult role. Especially with sort of some lads I've come across as well who's dads have left, mums got new partners and they get beaten up I've known kids who've been kicked out of home because the new partners have said well, he can go or I can go, you decide and they kick the kids out. So…** so you see yourself as a positive male role model? **I try to be positive male role model because a lot of them don't get it and I think that causes problems especially in adolescent boys (1j).** So it's about them having the opportunity to have a positive relationship with somebody? **Yeah, yeah.**

19. Has observing the young people here altered anything about your view of them? If so, how?
    Erm yeah you look at the paperwork and it gives you a rough idea but that's not what you go on if you see what I mean, you have to work with them and talk to them and it's about, it's about the personal touch as well it's finding out what music they like, what football team they support so you can have some just normal bog standard chat/banter throughout the day or the next week as well you can talk about what's gone on and what hasn't gone on and I think you need that, you need that everyday sort of stuff. Because that builds on your relationship? **Absolutely, and that's, again it's all part of somebody listening to them, somebody talking to them and not talking at them or talking down to them, it's a major major thing (7a).** Right, ok so it's about that respectful relationship? **Absolutely.**

20. Is there anything else you think I should know about the impact of Forest School?
    Erm, not of the top of my head.

Appendix 8.7 Participant B (Forest School Leader)

1. Introductory explanation – Thank you very much for agreeing to be interviewed for this study. I am interested in your views about the Forest School programme. There are no right or wrong answers, and please answer as honestly and freely as you can. I am trying to get information about exactly what you think is happening at Forest School so please, feel free to take your time to consider your answers. You will not be identified as having been involved in this research. Can you confirm for the record that you have given your permission for this interview to be recorded? **I have, yeah.** Thank you.

2. Can I just ask how long you have been involved with a Forest School programme? **5 years.** What led you to become a Forest School leader (or involved in this programme for TA)? **The opportunity was there at the school to do one day a week and it's um something I enjoyed doing so we've upped it to 3 days a week and 2 days a week in schools.** What experience do you have with pupils with special needs? **I work with them 5 days a week, from 4 year old to 18. From um EBD kids with the behaviour side of it to special needs kids.** Has that been for 5 years, since you've been at the school? **Erm 5 years at the school, 2 years behaviour er management and then 3 years doing outdoor Forest School.**

3. What, in your view, are the aims of Forest School?
   Erm to promote their independence ^(6k) I think, to raise their self-esteem, um to give something for them to be proud of, rather than being badgered in school all day long. And erm self-worth, you give them something to go towards ^(1a).

4. What do you think are the distinctive features of Forest School which allow these aims to be met?
   It's more relaxed it's still focused, the boundaries are stretched somewhat um, but you've still got boundaries there, the rules are still there but they're more um easier for the kids to understand. So when you say easier for them to understand… **Um, yeah they're its, there's as little as possible but enough to make it work as in safety wise and we give it, a lot of it to the children as well, should we do this, should we do that, if not why?⁽¹ⁱ⁾ Obviously at school you'll have a million and one different reasons why you can't do this can't do that but here, it's a dangerous environment but we try to keep things simple but effective so out here they can make their boundaries as well and the rules and then we enhance them somewhat.** So they understand the reasons for doing things here? **Because they started the process off, so y'know, their understanding is more there isn't it ⁽¹ⁱ⁾.** So it's about their own boundaries? **It's their group as well isn't it, it's their area, it's their vision for what they want to do here, within their camp ^(10e) so we're giving it over to them. It's not like walking into a school, you're walking into a set, a classroom with four walls, and the doors and the rules already in place ^(9d). They have no um say in most of the stuff there but here it's their voice isn't it, we're a team, a community so we have to work together ⁽¹ⁱ⁾.**

5. What, in your view, could be factors which stop these aims being met?
   As in government wise? Any factors really. **Yeah, the only thing that I think can hinder it is the government and the school (11f). I think y'know it's not working and um so much emphasis now is put on exams and um it's gotta be done this way and that way they're driving it down their necks and it's not working. Y'know, these kids need an outlet. And it is working for them, it works for the majority of them (11f).**

6. What other forms of outdoor learning have you experienced? How does Forest School compare to this?
   It's the old curriculum question isn't it, outdoor learning is learning outdoors but with a way more focus on the curriculum, dotting the I's and crossing the T's, it is still outdoor and I enjoy doing that, but mostly it is in school grounds so you've still got that um classroom feel to it, even though it's outdoors and I know a lot of forest schools are on school grounds but they're a separate entity, whether it's wood or it's a different environment. A lot of outdoor learning in most of the schools I've been to takes place mainly in the playground or takes place outside the classroom in a little area or something so it's still outdoors, it's still benefitting them, it's half way there to forest school. So, it's got that different feel to it, you've got the different, whereas, how can I say, everything will be done already, if you have to build a raft for instance, that was their mathematical challenge or their, so, you're getting the maths into it and communication but all the stuff's there whereas at Forest School if you did, you know, something like that it's start to finish, you've gotta go out and coppice the wood, you've got to go out and measure it. It's the focus isn't solely on the maths, maths will come into it and you'll probably get other stuff into it as well without them knowing (6d). I think outdoor learning all of the kids know they have the understanding, this is the lesson, this is what we're going to do, this is why we're doing it. So it's a lot more structured and explicit? **Yeah, yeah.**

7. How important on a scale of 1-10 is the role of Forest School leader to the success of the programme?
   10 I think, definitely, it's it's gotta be 99% Forest School leaders I've met are the same, sort of um focus on why they're doing it and, we don't rest, we always push it further and push it further, I wouldn't say we're anti-establishment but there's a way forward that we all I think we all believe is the right way to go, and it's working. If you were involved in the recruitment for another Forest School leader, what kind of skills, experience and attributes would you look for? Which are the most important (3 or 4) factors? **First and foremost I guess it's their beliefs and their attitude towards why we're doing it, you've gotta know why, what are the benefits the children are going to get out of it, and yourself obviously. It's not so much um - it's hard for a teacher to be a FSL, I think. I've worked with a lot of teachers in the FS environment um where it's my session, I'm the FSL for that half a day or a day, and they find it hard to let go. Constantly watching the children do this and do that, telling them this when I, it's hard for them (10c). Because, in the classroom they have that structure, the kids sit down, you stand up, you're taller than them, you're**

a bigger person, you tell them to do this, this this and this that's what you'll do and if you don't, you know, you face the consequences. Where - as a forest school leader you don't, you sit at the same level, you talk to them at the same level, you're at where they're at (7e). SO it's about somebody who can step back? **You've gotta be able to do that, you've gotta be able to be a bit more mellow, be a bit more non-pushy (10c). The kids will take you where they wanna take you. You can sway them somewhat but um it is child led and that's the downfall I find of teachers, they do a great job in the classroom but unfortunately this is our classroom out here and it's a big classroom. Yeah, the focus is more on the children. It's child led (1d).** In terms of their experience what would you look for in a FSL? **Erm, just some experience in the outdoors I guess and working with the type of children, whatever type of children you're working with. So much of it, there is a difference with the type of children we're working with, so the year 11s have got capabilities are of mainstream school, to working with 6 year olds who've got speech and language problems but they can all do it, they all take part and all be successful you just have to adapt it. You have to have a clear mind I think and an open mind.**

8. What helps a Forest School leader to run a successful programme? What hinder them? **What kind of…?** Features, like the support of the leadership team, resources, the children involved…**Yeah you've…so the one that I'm making now in our new school which hasn't been built yet but it's coming, you've gotta have the support of the SLT but you've got to also have them to step back cuz I want what I want down there. And they've got to have enough about them to say yeah, it's yours, do whatever, y'know I will make it work, I know that so they've gotta leave me, but you need that support initially (10a). Resources you don't need that much to make it successful, it's more to do with the environment and keeping it as it is somewhat and from the birds what I can hear now to all the vegetation and the life that's there, the kids can learn a lot from that (6a). So, um the support is there but it needs to be in the background. It's minimal stuff that you need to make a successful FS, I think, you know.**

9. In your opinion, what effect does Forest School have on the young people involved? Can you give me some examples to illustrate your thinking, please? **Massive effect, absolutely, I wish I would have had that change when I was a kid. I had it somewhat but out of school because I lived next to a wood so I would spend my life in the woods but to me it's a massive effects for the children that I've already worked with that have gone onto um successfully make something of their life, if you take into account that predominantly one child when he leaves um year 11 it's probably tagged, or in a cell within the first couple of weeks. That's our statistic. And it's - we've got a lot of vulnerable children and that so to turn round and have one each year or maybe two that have done something, some successful years we've had 3 or 4 that have gone on and done something, and stopped out of prison and trouble, but gained a career. And to see them afterwards erm if they come in and they see us which a couple of them do and say its because of what we did down there we enjoyed it, blah blah blah y'know and to me it's got a massive effect on them and if we can,**

society as a whole… I noticed that always took them from young in mainstream schools and when they're going off the rails a bit from 14-16 but there's nothing in the middle. And that's why, in my school I've tried to say said look y'know we need to carry this through as much as we can, and the more vulnerable ones work a bit harder on them. But it's a massive impact it's much more relaxed and it's a bit more erm, you see **you're going to have a bigger impact on their life so if they haven't got the opportunities at home, all the sort of stuff like that** [(9b)]. So it's about giving them opportunities for the future and skills? **Oh yeah I mean, yeah and teaching them there's something out there, they can do something in the garden or do something with horticulture, be a gardener, they can do that, they might not be able to work in a bank but they can physically do something and make a difference to their own lives** [(6g)].

10. Would you expect to see all of these outcomes (summarise outcomes from Q9) for each child? If not, what do you think any differences might be based on?

    I wouldn't, y'know, you're not going to be successful with every child, you'd like to be, but in the world, you're not going to be some are still going to, they'll go down a path when they leave, get in with the wrong crowd and that [(11e)]. What do you think those differences might be based on? **Obviously, some uncontrollable elements like home life, their friends, the environment around them** [(11d)]. **Hopefully, erm, they can still pull through and think we could do this and we could do that, it's elements that I can't, I've got no um I can't make… yeah I mean we can do what we can do here but when they leave, we've got no control over them, it's trying to make a difference here, while they're here** [(11e)]. **You know?**

    I've been reading the existing research around Forest School which is most often with younger children and have found that it talks about some common outcomes, some of which you've already mentioned (if they have). I would really like to explore these areas in more detail with you please, and find out whether you think these effects for young children are the same or different to what you have seen happening for your group.

11. Do you think going to Forest School affects the confidence of these young people? If so, how?

    They all gain in confidence, all of them [(1b)]. **Um.** What exactly do you think is happening down here to make that change? **To make the change, it's they're trying new things, even the younger ones, each time we have them down here they'll try something new, or they'll want to try something new and it's great at the end of the sessions when you talk to them, especially the younger ones, can we do this next week, can we have a go at that** [(1a)]. **But the older ones they wanna try a new piece of furniture to build this, and you'll probably ask this I don't know but later on, it's ok to make mistakes** [(1h)] **and if you can get that through to the younger ones and the programme should be a lot longer than half a term and that's why we bring the older children out here for the year** [(1b)] **and back in school I work with some of them for the year. Who the headmaster wants me to work with predominately it's not a short fix, they need to know it's ok to make a mistake, we make mistakes. That's the problem with adults they**

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do not ever want to show they've made mistakes especially a teacher in a class if they've done something wrong, they're never open. Here we're open, we'll carve a piece of wood, it breaks, we through it away. So they can see we do it, so they can do it. And then, from that their confidence rises because they'll try something knowing that if it goes wrong, we're not going to tell them off and they can throw it away and get another piece of wood and that's the way it should be in anything that they do. And because, because we're like that and they see us make mistakes and see us not, um y'know throw a piece of wood across and do this or smash this, they do it and because they do it they'll think oh I'll do this next time and can I have a go at that. Y'know **(1h)**.

12. Do you think there has been any impact upon their social and emotional development? If so, how?
Yeah I mean I work with a couple of people down here, as in them, talking to each other? Yeah…**It's the best place in the world for them to talk about things that they wouldn't talk about in school to any of the staff and the therapists. I guess - I've had a parent come out to me a certain child that lives with mum and another lady but never say anything about the situation, ever, not even to his mom and or his moms partner and then in the wood the one day he just turns round and tells me his life story in a 5 min sort of flurry of words and when I told his mom she couldn't believe it she said he's never opened up to anybody and I said it's y'know it is that element of openness (9h).**

13. Any impact on language and communication skills? If so, how?
Yeah, how they again, it's not in the classroom is it so um yeah they come out with words and there's no pressure so again even with speech they can be trying to find a word but not know what the word is but you never hold up your hand in class as it's that or this this, they wouldn't do that in class because you've got the pressure from the teacher and pressure from their friends and other people in the class but out here they would (3f). They've got the space to take you aside or, knowing that we're all a team and we're not going to say anything so and they can communicate a lot. They're more relaxed, basically when you're more relaxed your communication flows a bit easier doesn't it so yeah I mean it improves that(3c).

14. Any impact on motivation and concentration? If so, how?
Yeah I've had masses of um how would you put it, the instance is the one lad, one lad who I've brought out here for 3 years because he'd gone from hiding under the table at school attacking people, and erm just losing the plot every so often, to coming out here and we noticed a big improvement with his behaviour (9d) and um and his motivation in school because at the start we were bringing him out here on a Friday so his motivation was to get to Friday without doing something really silly and, y'know them saying you can't come out, which we did once and that really made him sit up and think because he loved it out here. So he was motivated during the week to get here on a Friday (9f) and we kept bringing him out here and he was fantastic, his concentration… we did a bow drill, which even

the experts sometimes it doesn't work, it can take you an hour, it can take you… whatever. He was that adamant he wanted to do it, I saw this guy sweat for 3 hours, for 3 whole hours before he did it **(4b)**. So he really persevered at that? **It was amazing. When I took him back in school they couldn't believe it because this was a guy who, three years ago, wouldn't have took 3 minutes before he threw it and then would have 'I want to do something else' so this, it does work (4b). We've had little instances where y'know it could be two weeks they've worked on for two weeks they've been motivated and they've persevered with it and they've been patient where when they first come out they're wanting it done now, in an hour and if it wasn't they'd smash it and do something else. So yeah it does work, it's massive again that's another really big thing (4b).** So you think they're thinking in their minds I've got the time to do this…? **It all comes again from everything gels together, it's self-esteem, they're proud of what they're doing, um there's no pressure, there's no time limit as such, you know you're not in a 40 minute lessons and you've gotta get to your next one, you're here for the day there's no pressure from us. They know if it goes wrong they can start it again (4e). Erm, help is always there and so everything to do, connecting to FS helps each other out. It's not one element it's lots of different elements all together that's what that why it's so successful. You know they all jump on each other's back and ride along together.**

15. Has it had any implications for their physical skills? If so, how?
    Yeah I mean I er a girl with cerebral palsy, um we all like to to help each other we're a team (2e) so if there's 3 wheelbarrows and 5 kids the maths comes into it (6d) they have to work out whose going to push it where all the wheelbarrows are the same. Some people don't like the physical, that sort of physical way because they've got to push a wheelbarrow down, I don't want to push it down that's too tiring or whatever. But this girl with CP in her one arm - fantastic, you know when they see her push the barrow down and she's determined, she may have to put it down 50-60 times and have a rest but the determination and willpower that is there to do it, and when you've got that, the other kids look at her and think she can do it, I can do it. And again from having your some sort of overweight kids here, instead of being sat in a classroom behind a desk for 40 mins for 3 hours a day, whatever they do, they're out here, active (5c). Whether it's just walking around the wood, walking from y'know one tree to another, it's physical (5c), and they're out in all elements whether it's snow, it's great for them (4d). So it's about that opportunity to use their bodies? **Yeah, they're not going to walk a lot round the classroom but out here it's limitless you just keep going. And because it's not a PE lesson, again it's that lesson thing isn't it, you've gotta do this in PE you've gotta run here. They haven't out here they feel more relaxed so they're going to walk more (5c).**

16. Has their knowledge and understanding been affected? If so, how?
    Knowledge and understand is another big thing, whether it's life skills or maths, English, history, anything, their knowledge because there's not one set thing that we talk about. When you're sat round the fire whether

there's 4 kids, 2 kids, 12 kids, they talk about different things and one thing rolls onto another and y'know you can still, you touch upon curriculum stuff, history geography but it's also life skills **(6d)**. I had a child that was leaving school in 3 weeks, been through the whole system, hadn't got a clue what mortgage, overdraft, they all think the same, oh y'know I'll buy a car, get a house, haven't got a clue about life in general so you talk about different things so you know, that's another big element **(6b)**. So you haven't got that set agenda about what to talk about? **No, yeah and then it will roll onto something else, it will talk about um we did one about a kid said, will an egg explode if you put it on the fire? So, we got Science into it. We'll talk about why would it explode, so we talked about why it would explore, that went on for some reason it went all the way through systems of - we ended up with water, we were talking about water **(6k)** so, there is no agenda, we never know where they're going to take a conversation it could last for 10 minutes it could last for an hour. We've had some great ones on the royal family and we couldn't for the life work out how he got there but the kid was so intrigued talking about everything it was bizarre so yeah you've got all that **(6k)**.**

17. Psychological well-being is linked to happiness, satisfaction with one's life and the absence of mental health problems. Do you think Forest School has had any impact upon the young people's psychological well-being? If so, how?
    Yes, yeah I mean it does, I mean I've had year 11s- when you bring primary down and you set up a rope course they're screaming and laughing and that. If you take the y11s over to that - their site - they will play like little children. There's not a pressure, so they will play like little children, 16 year old kids on a rope course giggling and laughing exactly the same as if they were 5 or 6 years old **(9g). And…so you've got that element in with it and their childhood is all to easily taken away and even, y'know at 16 when we've been, we've been down here with groups and we've been talking about stuff like this -it's memories. Everything that we do here, hopefully, is gonna go into their heads and stop there and they can, whether its when they're 26 or 20, they're in a dark place they can think about and think back. Something's going to remind them, a tree, a scream, a piece of rope or something, oh I remember doing this, I think it'll work that way, I think it's great as it was for me. When I think back to my childhood there's always things around me I see, people around me, names or smells. I think they get that every time they come down here. So hopefully if they are in a dark place, it will pull them out of it.** That's really interesting – I hadn't thought about when they were older.

18. Are you aware of whether the Forest School experience has impacted upon any other areas of the child's life? If so, how?
    No it's a whole general wellbeing of the child isn't it, from your physical to your mental to appreciating people and what's around. Forest school gives every- at school you haven't got the time, it's too structured **(9d) it's all about figures its all about pushing it. To me now schools are an industry, they're a business, it's not how it used to be 20-30 years ago. Forest school is that outlet where we can still get exams for the ones that**

can. **For the ones that I teach out here I bring out here from y'know the disabled kids it's experiences - they should have the experiences the same as everybody else, we just do it in a different way. It is, you know, I think it hits on everything. There isn't one certain things that makes forest school a forest school, it's a load of things together. You can take some out and there will be gaps, but it'll still be Forest School. Whereas to me school is a school, in a nutshell. A school. Every Forest School, every leader is slightly different, every session is slightly different, every environment that they do it in is slightly different.**

19. Has observing the young people here altered anything about your view of them – I know you see them in school aswell? If so, how?
Erm, because of the job that I did before in behaviour, that's why I think I liked FS so much. Because, I didn't really like the school, I didn't really, y'know I felt pressured at school as well and the role I was in before I started FS, it was when they kicked off in the class I'd take them to one side we'd go for a walk in the wood and it worked, it'd take their mind off it, ==calm them down and that's what FS is about== <mark style="background:green">(9a)</mark>. And that's what I thought, I've gotta work in this, I've gotta do this, one day a week I've got a supportive head so suddenly one day a week, three days a week out in Crow's Wood here and then 2 days in school and then when we build it the new site, y'know he's got some land for me. I just think it hits upon everything that's childhood. We take everything that's childhood, what's childhood now? In school – 4 or 5, parents are high pressured so they're working, straight into school, all the way through to 18, you've gotta do this you've gotta do that because when you leave you've gotta y' know…it's so hard isn't it nowadays? It's a hard life for them. So do you think, because you see them in school and out here, do you see them differently? ==**They have a lot more respect for you, for me generally. Is it the way we treat them? Is it the way we speak to them? Is it because we understand them? Is it because we take time to understand them? We have the time to listen to them. I certainly think sometimes they have a voice but nobody wants to listen, whether it's school whether it's a pressure or whatever but we've always got time to listen out here so if you give them that bit of time I think you get a lot more respect off them than erm. Certainly when I'm in school they see me differently to other people==** <mark style="background:green">(7a)</mark>.

20. Is there anything else you think I should know about the impact of Forest School?
No I mean, you know yeah, you know what our views are of forest school. If I could change anything and say to Michael Gove or whatever, this has got to be done it would be that every child gets a chance but don't take it away from them after they're 7, 8 years. Don't pull it out and have that gap and then when they're 14 or 15 think well they're y, know. It's worthwhile you can get the curriculum in there as a FSL I wouldn't like to push that but it's that gap that's missing. We should be doing this like in Holland, Denmark, Sweden, we should be doing it all their life. It's half a day – just keep it up and keep it going. You know?

21. How would you like to receive the results of this study? How do you think I could best let parents and the young people know about the results of this study?
Whatever's easiest for you. Speak to the SLT in school about how to tell parents.
Thank you very much for your participation. Do you have any questions for me? **No.**

Appendix 8.7 Participant C (Teaching Assistant)

1. Introductory explanation – Thank you for agreeing to be interviewed for this study. I am interested in your views about the Forest School programme. There are no right or wrong answers, and please answer as honestly and freely as you can. I am trying to really pin down what exactly is happening –what you think is happening at Forest School so please, feel free to take your time to consider your answers. You will not be identified as having been involved in this research. Can you confirm for the record that you have given your permission for this interview to be recorded? **Yes I have.**

2. How long have you have been involved with the Forest School programme?
Only this last, well since September, so the last school year. What led you to become a Forest School leader (or involved in this programme for TA)?
Because the class that were going to Forest School on a Thursday I was following them around in school so it was automatic that I followed them at Forest School [10b]. What experience do you have with pupils with special needs? **Only from here um I started in 2009 um prior to that one I was doing a special need social inclusion degree, I set up a youth club with children in need funding for three years and they were very similar children from er sort of impoverished areas from X and X, which feed this school.** What age ranges have you worked with? **In the youth club setting anything from 5-16, um here it's mainly Year 8s upwards. Not primary anyway.**

3. What, in your view, are the aims of Forest School?
I think it's to bring people who don't like classroom settings and have to adhere to writing work, reading work, a different way to express that they can achieve [1a]. Anything else come to mind? **Erm, no.**

4. What do you think are the distinctive features of Forest School which enable those aims to be met?
You're not in a confined space are you, it's big free open space [9i], you're not at a desk [1f], you don't have to wear school uniform [7e], there's not much writing and written work and listening it's all very relaxed, well especially with our group it's a very relaxed atmosphere [9d]. In fact I did note that they could sit there and chat whereas if you give them free time in a classroom setting it just goes absolutely mad and they're running out the classroom and everything [9f]. It sounds like they can cope with that freedom in school? **No they can't cope at all with free time.**

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5. What, in your view, could be factors which stop these aims being met?
    What do you mean like the weather (11a) and stuff? Anything like that, yeah. **We've got one kid who didn't like change so to start off with it's I'm not going on that minibus, I'm not going down there, so I suppose it's whatever their special need is isn't. So if they're very autistic, so today we've gone swimming and one child doesn't want to go in the swimming pool but we've actually get him to go on the minibus to where we're gong now. It's the same with Forest School- I suppose if they don't like change and we're taking them out of their comfort zone. We have worked on it and y'know, they moan for 5-10 minutes now and then they carry on (11d).** So it can be something about the difficulties that that child has which can sometimes stop them accessing Forest School? **Yeah, yeah.**

6. What other forms of outdoor learning have you experienced? **No, none at all.**

7. How important on a scale of 1-10 is the role of Forest School leader to the success of the programme? If you were involved in the recruitment for another Forest School leader, what kind of skills, experience and attributes would you look for? Which are the most important (3 or 4) factors?
    10, definitely. They've gotta have all those skills that A and B have got. They've also got to like the children and get on with the children that need these sort of activities. Patience as well (10c). When you say the skills that R and A have got – can you pin those down a bit for me please? **Well they've done all their sort of bushcraft, their health and safety stuff, their fire making, their woodcarving, and all that sort of stuff, electric tools and all that so they sort of pass on all of that. They seem to do it as a hobby as well and they've got lots of um, y'know stores to tell to relate to. I mean A went off on a course and they're eating road kill – I mean, our kids thought that was fascinating. They enjoy it don't they, you know they live, breathe and eat Forest Schools and I think that rubs off on the children (10c).** So it needs to be somebody who's very passionate about the activities? **Yeah. I mean I joined another Forest School group to cover A and one of the pupils there, it was a totally different camp to ours and he had to show me the camp and he just regurgitated everything that B had ever taught him. I told B the next day and he was really chuffed, absolutely amazed.**

8. What helps a Forest School leader to run a successful programme? What hinder them?
    I think the school management team have got to be behind it – I think they need to be interested in it. I think they need to see it actually. It's a shame they can't come out and see these children in those settings (10a). In my daughters school they've got a farm and the children, very similar to these, they constantly talk about this farm and I've met with the children and they're desperate just to go to this High school to go and work on the farm in that sort of environment and not be in school. Is there anything that hinders the running of a successful programme? **I mean it's money isn't it I mean, like this High school has got it all based in their school, I mean maybe it's something that could be built into a school rather than going and buying into other facilities (11f).** So do you mean it's something that could be done on school site or do you think it needs to be away from school?

It's works away from school but I can see it working in a school setting as well, yeah definitively.

9. In your opinion, what effect does Forest School have on the young people involved? Can you give me some examples to illustrate your thinking, please? **Well in this, my particular class, the class dynamics have changed, you've got the top dog and the sort of lower person who gets picked on, it's totally changed around at Forest School (2a). Um, a lad that gets picked on, you know, teased for his glasses and his low ability has sort of excelled at Forest School and I think it's reduced, as the term's gone on it's reduced his bullying in the classroom (2i). We've also got another pupil who's um doesn't engage with any of the academic lessons, shrugs her shoulders a lot but again she's thrived there, it's given her confidence (1b). So er….**So it's about confidence and the children seeing other children in a different light? **Yes, definitely and we've got another pupil who teases girls a lot, you know name calling whatever but he's got on with a female member of this group and I think that's helped in a class situation and setting as well (2c). Yeah, we also we've got two members who don't come to the wood and the one lad in the classroom setting they all give it the 'big I am' and play up to him and everything and when he's not there, it's a totally different setting once we're in Forest School as well, you know, they've got no one to sort of look up to and bounce off (11g). So, you know they're more equal there, they are very equal and in fact the two lower ones have come up (2i).** So your saying it has impacted upon that social hierarchy? **Oh yeah definitely.**

10. Would you expect to see all of these outcomes (summarise outcomes from Q9) for each child? If not, what do you think any differences might be based on?
I'd like to think so especially if they're, they've got passionate leaders like A and B. Because they do encourage them they do encourage them to try, and you know, you're not going to fail, let's just keep trying. And making fire sticks they all try and get fire sticks like A and he says well I've been doing it years and years and what they're achieving is absolutely fantastic - even when X didn't wanna do it, y'know they all try and try and do it sort of thing (1h). So you think the effects are quite similar? **I think cuz it's not academic I don't think they see that you can fail it's not like there's going to be an exam, although we have done coursework whatever, it's just things we can talk about that we've wrote down in their coursework books. I don't think they're realizing there's an academic aspect to it (1h). I suppose there's perhaps a big wall with academic stuff but this is more practical (6e). We talk about things a lot and it's opened up a lot of social conversation around the campfire (3a), you know the last few weeks we haven't really done much because they have done chairs, they have done fire building they've done this that and the other and we just sit there and the fact that they can just sit there is good. Because if we give them free time when they just wanna sit there in a maths class and talk it's havoc we lose 3 or 4 of them within minutes. Whereas if they know they're getting free time like the last few days of term most classes will be having free time, and they won't come to lessons they'll be walking around the**

school, they'll be wandering around [(9d)]. It sounds like you're saying they're all a lot more focused at Forest School? **Yeah they are and we can talk differently, I mean not that it's inappropriate conversations but it is a lot more relaxed environment** [(9d)], **we have this little joke that what happens in the wood stays in the wood. But, I don't know, they confide a lot more in the wood** [(9h)] **I mean one pupil who shrugs her shoulders here a lot, if you go off to collect firewood with her she'll tell me all about her family and I can learn loads from down there** [(2h)]. So it's something about opening up – would you expect to see that in other pupils as well? **I think so I mean I've been with them in and outside of schools but I know, I know R has had some similar experience again as well so. I'd like to think that you know, it's a positive impact all round, definitely.**

I've been reading the existing research around Forest School which is most often with younger children and have found that it talks about some common outcomes, some of which you've already mentioned (if they have). I would really like to explore these areas in more detail with you please, and find out whether you think these effects for young children are the same or different to what you have seen happening for your group.

11. Do you think going to Forest School affects the confidence of these young people? If so, how?
   I think they lack confidence in an academic setting because they can't read or write and they think they're just going to fail and don't even want to start tasks. Whereas if we're making something it's a different sort of task isn't it so you know, they're not going to get it wrong [(1a)]. **We've watched step by step and they've all achieved it and y'know, they're different academic levels within a classroom setting yet they've all achieved** [(1a)] **just from copying step by step things that A's done.** So their confidence is improving because…**It's not academic, they're seeing that they're able to do it and do it well** [(1a)]. **And they support each other as well, yeah, and they've supported me** [(7a)] **because I mean I also made this chair and they said 'come on Miss' and took over, and they want my chair now!** [(7b)]

12. Do you think there has been any impact upon their social and emotional development? If so, how?
   Yeah. Some of these that are at lower level in the classroom setting have sort of achieved more than the other boys in the setting, even if it's down to sort of making cans or throwing sticks or y'know, making these chairs, but he's definitely held his own there and his confidence has improved which has helped him in the school setting because he won't back down to them now whereas he did before. Oh right, would you say they're friends now? **They're friends there, they've still got another pupil who doesn't go to Crow's Wood so when he's about they'll start taking the mickey out of this other pupil but like I said he stands up for himself now, definitely** [(2i)].

13. Any impact on language and communication skills? If so, how?
   Um, I mean a couple of them were ok anyway. Two of them sort of don't want to engage in things within a classroom setting and I'd say that's still

the same but no where near as, y'know we could try the whole lesson and they still wouldn't get involved in the lesson in a school whereas it may be 5 or 10 minutes time on their own and then they'll join in. So that's definitely changed, yeah. So do you think you're more able to engage them in a conversation now? **I suppose so, well no we can't do it in the classroom setting but I suppose it's because it's a more relaxed atmosphere, you can cajole them a bit more at Forest School** **(3a).** I see, so they're more receptive to what you're saying at Forest School? **Yeah, yeah.** Have you noticed anything about their vocabulary development? **Mmm… no I mean they know all the words, the terminology to use for the Forest School. That's specific to that (3b). One of them will chat if you go off on your own whereas she, she's sort of quite mute in school. They'll open up more if you're on a 1-2-1 or smaller setting or if you're sat round the fire and there's a topic of conversation they all share experiences I mean some of them…. You know they do tend to share more (9h). But I wouldn't say I'd seen any noticeable difference in the actual language used.**

14. Any impact on motivation and concentration? If so, how?
    Other than one pupil, he lacks motivation he gets bored quite quickly. Um, that still happens in Forest School but he tends to always go back to stuff at Forest School. Whereas, whereas he's not motivated in the classroom setting, it can be 'I'm not doing it' and he's out the classroom. It may take another two lessons to get him back in whereas there if you leave him for a few minutes and then he'll come back round, he'll either do a different task or continue with what he's doing. So perhaps he's more likely to persevere at Forest School? **Yeah, and he just gets out and wanders round in a school setting (4b). I wish you could see them in this setting, it would be really interesting.**

15. Has it had any implications for their physical skills? If so, how?
    They're always competing against each other, yes, and like the lower ability person in the class has definitely excelled on the physical side. And even the er the girl pupil that y'know she's, she hasn't battled down or anything she's joined in and it's made her, yeah they all take turns but the argue about the wheelbarrows but they do do it. Is that because they're heavy? **Yeah.**

16. Has their knowledge and understanding been affected? If so, how?
    Oh definitely, definitely, um well like I said the two lower ability pupils in that class group I think have done more coursework than the other boys there, yes, they've done extra modules which was quite good (7c). Um. Yeah. And um they have learnt it because they'll come back here and feed into school here or they'll tell A; can we take this back to school and do this and this to it. Because they just want to develop it further (6g). No I think they've learnt a lot of skills. One of the pupils who's already been to Crow's Wood he was keen to tell the others his peers what he already knew. I mean he wasn't always right but he was keen to say do this, do that and they all shared their knowledge (3g). If someone's going off to make a chair they all, remember how you do it like this so they all feed into it, so I'd say they've all gained practical skills.

17. Psychological well-being is linked to happiness, satisfaction with one's life and the absence of mental health problems. Do you think Forest School has had any impact upon the young people's psychological well-being? If so, how?

    I think they're able to share um more of their personal experiences in that sort of setting, as when we're sat round the fire, um offloading their problems, yeah. And we talk about situations in school and y'know, the things that happen there. So yeah they do they share [9h]. Well we do as well, we, the staff go there and have a bit of a moan and they're quite supportive with me sometimes, yeah [7a]. So it's modelling that supportive ethos? **Yeah.**

18. Are you aware of whether the Forest School experience has impacted upon any other areas of the child's life? If so, how?

    Well I do think they've all become more confident [1a], they share [2c], they get on as a team in that setting definitely [2b], um, which we've already said. It's just a lovely, relaxed setting. I mean I look forward to it so much. I mean they'll say 'oh I'm not going there again' but they love it, they do, in comparison to being cooped up in a classroom.

19. Has observing the young people here altered anything about your view of them? If so, how?

    Yeah I get cross sometimes if they want to pick on people and I think, that doesn't happen elsewhere. I get a bit cross about that because I know they can be nice to them. Um…I've got to know them loads better, yeah definitely loads better, I've got such a good rapport with them now, yeah. In fact I think it's too good – I think they think I'm their pal [7a]. Would you say your relationship is more positive then? **It's all positive, yeah definitely. I mean they all say I fight their corner and I do, I would. I think that's had the same affect on me aswell because they'll look after me as well in a way, do you know what I mean? [7a]** We went somewhere and they all had sweets – no I didn't, I bought them chocolate for Easter, and we'd also been on a school trip and a member of staff had allowed them to buy sweets and this one pupil was eating them– not in our class. **Management came in to tell them off for eating these sweets and I came and said 'oh I'm sorry I bought them chocolate for Easter' – not that they'd eat it, think I'd apologise for something I thought I'd done and they came to my defense straight away, 'Don't get her into trouble she's only trying to help'. You know.** So they do stick up for you as well? **Definitely, yeah. So you know that has worked both ways [7a].**

20. Is there anything else you think I should know about the impact of Forest School?

    It's just fantastic, isn't it? I wish you could see these in the school setting though.

Appendix 8.7 Participant D (Teaching Assistant)

1. Introductory explanation – Thank you for agreeing to be interviewed for this study. I am interested in your views about the Forest School programme. There are no right or wrong answers, and please answer as honestly and freely as you can. I am trying to get information about exactly what you think is happening at Forest School so please, feel free to take your time to consider your answers. You will not be identified as having been involved in this research. Can you confirm for the record that you have given your permission for this interview to be recorded? **Yes I can.** Ok, thank you.

2. Can I just ask how long you have been involved with Forest School? **Erm, this is, I did it for probably 4 years and then I had a had a 2 year break and now I'm back there.** Ok, and how come you got involved? **Umm, I was just asked to, when it first started, to go along with the group.** Right, ok, have you done the Forest School leader training? **No I didn't.** No, ok, so what age ranges have you worked with? **They've always been, um, no younger than Year 10.** Right, ok.

3. What, in your view, are the aims of Forest School? **Erm, I think the big thing is confidence building (1a), um, and just giving kids a chance to see that environment because many of ours, just don't get that. They, you know, they never go anywhere or so this gives them a chance (1a)** So it's a different and a new opportunity? **Totally, yeah, yeah.**

4. What do you think are the distinctive features of Forest School which enable those aims (confidence building) to be met? (**Pause)** What is it about Forest School that's different, I suppose?
    Well, whatever they have a go at, they can't get it wrong. They cant, they can't really fail at whatever they do (1h). And it's so varied, the things that they can do, um, normally there's something that they like about it and they can find their little niche (1d). Um…so it's something about the environment, allows them to - to not fail? **Yeah.** The activities on offer and…
    And I also think it's the approach of the staff. It's relaxed, it's erm you know, they're not suited and booted, you know. The the clothes we wear and that they wear, are, you know, warm, that's the prime aim of the clothing that you wear, so it's not fashion it's not you know it's, just really relaxed (7e). Ok, thank you.

5. So jus thinking the other way, we've talked about the features of Forest School which enable those aims to be met. Is there anything you can think of that might stop those things happening? Any factors that might stop the confidence growing, anything that hinders the programme?
    Erm, um… we do get some who are not keen on um going out in the elements. So if it's cold and wet, um, and sometimes parents, if they say well I'm not going cuz it's raining, parents will keep them at home. Yeah. Um, but other than that, no, no I can't think of anything (11a).

6. Have you done any other forms of outdoor learning – running or supervising anything else? **Um, well there's the er Where Next? garden centre that I**

did. I also support them out at college, I've also done you know sort of all the, over the years college courses with them, erm. How would you say Forest School compare to those other programmes? **I think it's up there at the top.** Right. **Yeah, em. <mark>Because college is still, like a, it's still a school type of learning environment which it, it would, for some, it is just that's like a brick wall. They come into a classroom and you're setting them up to fail. Whatever it is that you're doing in there, even if it's going to be something that's fun, they can not deal with the classroom situation</mark> [1f].** And are you saying FS is different because it's not a room, it's out in the environment? **Yeah yeah, it's out mmm.**

7. You've already hinted at the role of the FS leader, how important on a scale of 1-10 is the role of Forest School leader to the success of the programme? **Oh, it's 10, mmm.** If you were involved in the recruitment for another Forest School leader, what kind of skills, experience and attributes might you look for?
<mark>**Well the main one is that they can come down to the kids' level, that they can identify with the with the kids** [1j].</mark> Ok, are there any skills that you'd look for as well? <mark>**Erm, well knowledge of what they're going to put over, you know, that they know what they're talking about.**</mark> In terms of things like the coppicing and horticultural side, is that what you mean? **Yeah.** And experiences, is there anything that you'd look for? <mark>**Um, well I've only worked with with the one. Erm and A erm, he knows where the kids are coming from because he understands their backgrounds and how they tick.**</mark> So it doesn't necessarily need to be somebody who's got a teaching qualification? <mark>**Oh not at all, no, no.**</mark> Right, but it's somebody who can relate to them? <mark>**Relate and identify with the students, yeah** [10c].</mark>

8. What helps a Forest School leader to run a successful programme? What hinder them? (summarise – check if correct and ask if they want to add or change)
<mark>**Their knowledge, yeah, er knowing what they're talking about, their own skills** [10c].</mark> Ok, is there anything you think might hinder them running a successful programme? **Um, just their approach to the students.** Do you mean if they're a bit authoritarian, it wouldn't –**no that wouldn't work.**

9. In your opinion, what effect does Forest School have on the young people involved? Can you give me some examples to illustrate your thinking, please?
<mark>**Um, well confidence building definitely, um getting them focused, er we did have a student here who just ran riot all the time was never in classroom just caused issues and caused problems for all the time he was on site, erm going off smoking** [9f].</mark><mark>**When we took him to FS the one rule was that there was no smoking allowed and we thought this would be an issue because he would go – before he came into school he had to have a cigarette er and then he'd go off at breaktime and sneak off through the day but because he wanted to go to FS and because he liked it** [9f] **there, er we never had issues with smoking he never, had a cigarette all day and you know, we really thought, y'know at least at lunchtime he'd want to go off and have a cigarette and it was a definite no, no smoking from day one** [9d].</mark> Why do you think that was? **Because he wanted to be there and he**

knew that, you know. So he knew he couldn't be there if he smoked? **That's it – no Forest School.** Might it have been that he was so engaged down there he didn't think oh I fancy a cigarette? **That may have been the case after a while um but that was just…**so it can be used as a carrot in a way to get them to focus on their behaviour? **Yeah, yeah [(9f)]. Erm and he um he just loved being there and I used to come back to school and I used to say you know, you just wouldn't believe it.** And his attitude towards me because we were in a different environment um erm he y'know, total respect [(7a)]. That's interesting because other people have mentioned that. **Um. From him you know, to me, A, um, in school his language was atrocious but out there you never heard him swear, it was just a total turn around and people couldn't believe it when I used to come back and say he never swears at Crow's Wood [(9e)].** So it's something about confidence and motivation to stay? **Yeah.**

10. Would you expect to see all of these outcomes (summarise outcomes from Q9) for each child? If not, what do you think any differences might be based on?
    Oh it's got to be ability, you know I've taken group where they're less able, um therefore it's a confidence builder for all of them, even the less able you do see a difference after a while, er they'll try things that they wouldn't before. Um but again it's ability that makes it…so the more they can do out there the more motivated they become to continue? **Yeah [(11d)].**

    I've been reading the existing research around Forest School which is most often with younger children and have found that it talks about some common outcomes, some of which you've already mentioned (if they have). I would really like to explore these areas in more detail with you please, and find out whether you think these effects for young children are the same or different to what you have seen happening for your group.

11. Do you think going to Forest School affects the confidence of these young people? If so, how?
    Erm, we get them to do things that they just wouldn't attempt normally and with, with a bit of, not pushing, but just telling them that they can do it, you know and then they will have a go and then next time it gets easier [(1e)]. Er…so it's about experiencing success? **Yeah.**

12. Do you think there has been any impact upon their social and emotional development? If so, how?
    Social and emotional…(?) yeah so their friendships, how well they're managing their emotions…**well again because we spend a lot of time especially when it's really cold we'll all sit around the fire and we're chatting then [(3a)], in fact we've got one particular lad who um, for many years here just didn't speak, and it's his second year there now and he actually does converse, all-be odd words or a couple of words but he does and he's very relaxed um and does have a laugh and joke [(3c)].** So he's getting a lot out of it socially if he's interacting with people? **Yeah.**

13. Any impact on language and communication skills? If so, how?
    Well yes they do, because quite often you've got a couple of old hands at you know, this year we've got two who have done it before and it's nice to

see them because they, for them, they know it all, erm it's that… **if they see someone struggling they'll go over because we do stress that we're a team, we work together. Um, which some of these, some of our kids really struggle with but you know they do get into that, that sometimes you need someone's help and they might need your help and you see them you know, so again after a while, that social comes** **(2b).** So there's more helpful behaviour, is that what you're saying? **Yeah.**

14. Any impact on motivation and concentration? If so, how and how might it compare if you see them in school?
    Only a couple of mine who I've only been working with this year so, it is early days but again I think it's down to um because they can succeed it helps with the concentration because they're doing something they enjoy doing um whereas in the school situation, sitting at a desk they just really struggle with it **(1h)** **and concentrating and erm, at FS there's going to be an end product, not a piece of work you know numbers on a page which quite often means nothing to them, numbers on a page. Whereas they can actually have a piece of work, whether it be a carving, chairs, some of mine have made chairs and tables** **(4b)** **and…**so it' something that actually means something to them, that they're proud of producing? **Yeah.** Are you saying that they can concentrate for longer at FS? **Yeah, yeah.**

15. Has it had any implications for their physical skills? If so, how?
    Physical skills as in motor skills and things? Yeah. **Well yeah because they're um, if possible we get them using knives to do the carvings and things, they're building, if they build a shelter or a chair it's using hammers and tools and things which is all good for their motor skills and coordination and that** **(5b).** So you see that happening because they're practising, there are opportunities to use it? **Yeah.**

16. Has their knowledge and understanding been affected? If so, how?
    Again yeah because like I said the knowledge thing the fact that they the couple that we've got this year who were there last year um they use their knowledge now to **help the others** **(2b).** So they're gaining knowledge there all the time? **Yeah, definitely.** From being taught or experiences? **From being taught and sometimes just from their observations and they'll notice things and um** **(6f).**

17. Psychological well-being is linked to happiness, satisfaction with one's life and the absence of mental health problems. Do you think Forest School has had any impact upon the young people's psychological well-being? If so, how?
    Erm, well they're, all of the ones I've taken over the years, all but one of them have been happy to go and they've actually you know, you'll see them in the corridor and they'll say 'see you Wednesday miss at Forest School'. You know, they're looking forward to it **(9a) Um, as I say there was just the one particular one in all the years I've done it.** What was that due to do you think? **That was his attitude towards everything, still is** **(11d).** So his own personal choices and preferences? **Yeah.**

18. Are you aware of whether the Forest School experience has impacted upon any other areas of the child's life and development? If so, how?
Well I think because for some of them it is like that carrot that- if they don't behave and they get excluded then no Forest School. Erm, and I think it does make them stop and think you know, is it worth playing up and getting excluded, if I don't get to go to FS. So I think it does (9f).

19. Has observing the young people at FS altered your view of them? If so, how?
Of the children? Yeah. **Oh definitely. As I said like the one who comes to mind is was T, who at school was just horrendous and then you got him to FS and he was just a totally different person. There, there was someone nice in there trying to get out. But it wasn't just school. Home life was horrendous for him, there were lots of issues um but there it was almost he - you'd get him there and he could forget about everything else, this was a nice little world (9a).** Did you have a different view of him in school? **Oh definitely yeah, definitely and you know I would say because you know he'd be playing up, I'd say oh you know he's not a bad kid, I wish you could see him at FS because he's not a bad kid (7a).** Is that something you've noticed with others too? **Yeah, yeah.**

20. Is there anything else you think I should know about the impact of Forest School?
Erm, I just think it's brilliant, yeah. Erm and if my children would have had the chance to go, I'd like them to have gone, yeah. I think for the older ones it's brilliant, I know they do it in schools you know they have little areas don't they in school but I think for the littlies that's brilliant um because it exposes them to all these things with their teachers but I think for the older ones it is um much nicer to go off site, I think that makes a difference. If we were doing it, because you know we've got that area down there and there was talk about doing it there but I don't think it would work because its still in school. Taking them out, to the forest, totally different people, um there are no teachers, Headteachers or people breathing down their neck (10d) and A is just brilliant at what he does, he's amazing.

Appendix 8.8 Extracts of Observation Notes

FOREST SCHOOL OBSERVATION.   22ND May

Y11 x5

FS LEADERS x2. (FSL)

① OBS FOCUS - 1 and 2. 1-ASD 2-SLD.   REFLECT

IC

9.30 Group got ready by putting their   Clear
steel toe caps on.   routin

9.45 Group of 5 having a cup of tea [2g]   Relaxe
and left alone IC by leaders to   feel. Tr
talk amongst themselves. 2a   to go of

10.00 FS leaders approach to discuss
plan for the day. They offer that
the garden area needs maintenance 6a
and there is an area near the   Shared
garden which needs maintaining responsib
Discussion about what could be
done in this area occured jointly
member of group asked if they
could start cooking. (1d)

FS leader- "what do we need?"   Promptir
- wood for fire. "dry or wet?" 8b   independe
language "snappable or not?"   thinkin
Teamwork Group collect a range of dry wood
2b for fire to cook sausages. Some   All ch
break wood on their knees.   involve

10.15 2 noted some wood was damp- knowle
asked to get some birch bark 6a of natu
to start the fire. lang   world.

1- laughing with FS leader whilst
pulling birch bark apart. - "need
to separate it" FSL- "what do you mean?"
2

② - "pull it apart a little bit". apps to
extend/
10.30 Group sorting out who's lighting the explain
fire - [all wanted to light] working vocab.
out who did it before. sharing motivated
Turn-taking

2 - "come on, light it" - directing 2b
other child with firesteel tool. Lang
FSL - [non-directive] when group Prompting
gathered around fire but asking independent
"now what needs to happen?" 6c thinking
- not rushed to answer.

[Adult offered support] to chd using Supportive
fire steel - he wanted to do it adults.
alone. 4a
Once fire was going, all group
members were sat around it 1e
talking calmly and adding logs. Risk
moved away when flames came aware.
nearer (1e). safety.

10.45 Fire over to one side -FSL ["what do
we do to stop it spreading?"] 3d Practical
prob 2 - "put a log on this side" skills.
solving 1 puts sausages in pan. other
chd (x3) [tapping some logs together - Group
making a rhythm. 9c work/
musical
11.00 Sausages cooked - chd independently opps?
make their hot dogs. ate his Learned
near FSL and made himself skills
another cup of tea. 2c
[offered me a sausage] and cut it
on-so chd - sharing

③ in half for me.

11.30 After lunch, moved to horticultural area and observed how their
6a vegetables were growing. 2 "can we weed the barrels?" FSL- "what tools do you need?" ① 2 went to get the trowels.

Asking 2 while weeding pulled out a plant and asked FSL what it
Q3. was ③⁹ (a bean). 2 showed care for the plant by putting it aside to plant again later also checked with a peer what to do when finished. Negotiate Group had a discussion about
learning a worm 2 had found- "it's a
convo mealworm" "No, mealworms have black on them". remained calm despite this challenge.

11.45 While weeding, 1+2 were calm
calm focussed and appeared happy. They spoke to the FSLs and each other positively while working They appeared to be happy -laughing, smiling. 9a

Planting - 2 putting bean canes in FSL "talk me through what you're doing then, 2" 2 "putting canes in ready" 6a
Given FSL- "right, you'll need 8 evenly
time spaced. The thick end goes in the ground"

Pro-soci
behavi

Opps for
learni

Appreciat
of enviro

Self-regu

Calm,
feeling.

Opps for
verbal
rehearsa
Problem
solving
maths.

④ FSL " they need to be strong enough Real
real ⎡If it's windy⎤. 2 placing canes reasons
life unevenly. FSL " how many corners for doi
on a square?" 2 "4". FSL good, so thing
treat it as a square and put
the left over canes between the math
corners". FSL -" that's it. so where
are these canes in relation to Opps fo
each other? 2 ⎡opposite?⎤ FSL. yep langu
and these? 2- "diagonal" lang 6d develc
meaningful
learning.

12.00 FSL- "2, come here and tie this up- Use of
need to stop you killing beans" (had huma
relating been over-watering them. K-laughing)
1 + 2 working together to tie
the bean canes together (1 tying, Teamw
2 holding)

2 planting the beans - FSL "Put them
in about a couple of inches from the
pole". 2-"it looks ⎡p****d".⎤ Not heard by
lang- FS leader. 2 showed ⎡perseverance⎤ Finishu
swearing by finishing the barrel having tasks
planted 8 bean plants.

1- carrying garden tools but dropping
them. me closeby- "want a hand? K no, Independ
thank you anyway". Manner

1.00 Group ⎡eat⎤ packed lunches around Basic
fire pit- talking calmly. needs

1.30 FSL had been making a 'father and
⎡FSL skills⎤ 10C

⑤ son bow. He let the group have a go with it. were able to hum take and use it carefully. See photographs. Trusted to use bow responsibility.

1e Trusting with weapons

2.00 Group walk to site near garden area requiring maintenance. further discussion about what it might look like and how (ie use hazel to make a gate) [1 and another work together to bring a 2b large hexagonal plant pot over as a seat, others clear the site]
musk work together 2 moved broken bricks away.

Sense of joint ownership responsibil of area

2.30 1 tidying away kitchen utensils ready to go back to school.
Me- "what is it like here at FS?"
9a 2- "peaceful". "What was your favourite activity?" 2- "making a chair."

Restorative effects.

FOREST SCHOOL OBSERVATION   23rd may

Y10 x 4
FSL x2   TA x1

(6) OBS FOCUS   3 and 4 (BESD/SLD).   REFLECTIO

                                                        1C
9.30 Arrive, and change into their steel   Routine
      Voe caps. Weather is rainy so they   set.
      also put on coats. 1C 4d 7b

                                                        1C
9.45 Group go quite a way off to collect   Trusted
      firewood. TA goes with them, FSLs   to go o
Enough stay at their campsite 19 observing of site
adults things in the environment and
      using the correct vocab-["millipede, Vocab of
      deadwood".] 3b   natural
                                            world.

10.00 Back at camp-[group helping to
      put up a tarp to keep us out of   Requires
      the rain.] 2b 3 9Very quiet - sat on a teamwor
      chair she had made. - off
      collecting more wood.

10.15 3 sat quietly occasionally [talking   access to food
      to one other boy] [ate a biscuit] 4   Thinking
      J as talking to a FSL - "my   about FS
      friend at the skate park comes   when n
      down to Crow's wood". He wanted   here.
      to know whether the FSL knew him

                                                        1C
10.30 [The group (except) 3 were working   Risky
      together to light the fire - trusted to activities
      do this by the adults.] [4 noted   Need each
      wood was too wet and went off to   other to
  4a whittle a piece of wood to help   shield wi
      the fire catch (see photos).] [Group Independe
      persevered to light the fire.]

⑦

Time	Observation	Notes
11.00	3 still sat quietly - out of rain. Occasionally talking to another child before he went fishing. **2h**	Although described as shy b... FSL, N is communic...
11.15	4 - [wanting to make a birdbox "can we use powertools?"] "what would we need? (FSL). **create - 6e 4b 6b** 4 - "I was thinking hazel - do we need to coppice it." Went to look for a piece of wood. *meaningful activity*	Intrinsic motivat... Using natural resource...
11.30	FSL sawing wood to make another bow - [demonstrating skills.] **10c**	indirec... motivati... enhance...
11.45	[Issues which had occured in school were discussed] *Chance for reflection.* **9h**	Using a restorati... time?
12.00	"I'm tired today" (4) "We should have FS on a monday - we'd be full of energy." 4 has medication at 12.00. [meaningful, reciprocal conversation around the fire between group (3 still very quiet").]	Aware of tiredness... YP talking without conflict.
12.15	Another child cooking the sausages - **2c** *relating* [4 "cheers, mate".] [FSL modelling *positively* making a wooden spoon] FSL showing *to each* 4 "pure protein and calories" *there* *other.* (about omlette.) lang	Showing peer respe... Sharing)
12.30	4 sharpening a knife used for whittling. FSL needing to offer	Repetitive actions.

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F1

Wood Centre

Risk Assessments 14-16 Groups

Experiences & Activity Assessment

Experience/Activity: Bladed Tool use (Bushcraft Knives, Axes, Billhook, Slasher, drawknife, spoon knives, ades, felling axe, chisels, loppers, secateurs)	Group details:14/19
Other Risk Assessments referred to;	
Assessment carried out by:	Signature: Date:5/10/10
	Review date:

Benefits of experience/activity
Improve hand eye co-ordination
To learn how to use bladed tools correctly and safely
To gain in skill levels
To gain in self confidence and raise self-esteem
To learn about risk management to themselves and others when using bladed tools

Wood Centre

Risk Assessments 14-16 Groups

Cut and stab wounds to others.	medium	-Careful instructions and supervision -Appropriate spacing of students (blood bubble) -Students to be in safe strong standing/sitting position. -Ensure and check loppers and secateurs sharp and in good working condition ie no cracks/chinks in handles and blades and hinges all working well (not loose) -The loppers and secateurs are always to be counted out and counted in by the FS leader. -Blades to be left closed when not in use -Safe carrying to and from place of work	low
Axes and billhooks			
Cut and stab wounds to user	medium	-Careful instruction and supervision -Appropriate spacing of students (blood bubble) -Ensure and check tools are sharp. -Billhooks and axes are always to be counted out and counted in by the FS leader. -A record of who has axes/ billhooks is kept in a book. -Axe/billhook kept in sheath or chopping block when not in use -Students (under 18) are not to use axes for one handed work. e.g. splitting kindling, carving etc. for shaping billets etc stock knives should be used. Kindling should produced by froeing. -Slitting mauls should be use with clear instruction and under supervision.	low
Slashers and scythes			

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Wood Centre

Risk Assessments 14-16 Groups

Experiences & Activity Assessment

Experience/Activity:
Firelighting

Group details:14/19	
Other Risk Assessments referred to;	**Signature:**	**Date:**5/10/10
Assessment carried out by:	**Review date:**	

Benefits of experience/activity

To provide warmth and security
To enable the students to learn basic campfire cooking and provide themselves with hot food and drink
To provide a focal point for the camp which in turn promotes group discussions
To gain a sense of achievement when lighting fires from what nature provides
To raise self esteem and self confidence
To gain knowledge of the best natural materials for fire lighting
To learn respect for fires
To learn how to site a fire properly
To teach the students the ecological impact a fire can have

Wood Centre

Risk Assessments 14-16 Groups

FI \e

Experience/Activity	Hazard & Risk	Level of Risk	Control Measure(s)	New level of Risk
	Setting fire to woodland	high	-Fire only at specified sites. -Fire area in an open space away from trees and protected by larger logs. -Only build small, manageable fires -Monitor fire at all times -Fire blanket and water available (10 litre can minimum) at site to extinguish all fires at end of session.	low
	Burns to students	high	-Water available at site. -Clear instruction -Camp fire rules reinforced at every session even when no fire. -Students to remain seated on logs unless cooking and then only to kneel from logs and behind a safety line of logs (arms length from fire)	low

F2

F.

Developing Group and Teamwork Communication Skills (tutor sign-off sheet)

Student name.................

Learning Outcomes		Assessment Criteria		Evidence	Tutor/Assessor	Date
The learner will:		The learner can:				
1	Understand the roles and responsibilities associated with working in a group.	1.1	Identify different roles for group members when completing specific group tasks. *2a*			
2	Interact successfully with group members and staff in a range of contexts.	2.1	Communicate appropriately to others in a range of structured situations. *2c*			
3	Demonstrate listening and conversational skills for social interaction.	3.1	Select information being communicated orally and respond appropriately, showing that the information has been understood.			
4	Be aware of others rights to communicate within a group situation.	4.1	Allow others to express their view/responses without interrupting on a number of occasions in different group situations. *2e*			
		4.2	Discuss why this is important			
5	Recognise the importance of co-operation when working in group situations.	5.1	Identify a number of situations when co-operation is necessary to achieve a group task. *2b*			
6	Accept and respond to praise and criticism in a variety of contexts.	6.1	Identify the appropriate response to praise and constructive criticism from group members in different structured contexts.			
7	Be aware of the role of those in authority and their relationship with them.	7.1	Identify their relationship with those in authority.			

Date passed whole unit;

Tutor name;

Tutor signature;

F3

Developing skills in Garden Horticulture (tutor sign off sheet)

Student name................

Learning Outcomes		Assessment Criteria	Evidence	Assessor	Date
The learner will:		The learner can:			
1	Demonstrate an awareness of garden/allotment produce.	1.1	Name and identify three different flower varieties and three different vegetable varieties to grow on an allotment or in a domestic garden. 6a		
2	Know how to control weeds.	2.1	Identify six different types of weeds, from a given selection 6a		
		2.2	Select and apply a control measure that will lead to the elimination of three of the weeds identified in 2.1.		
3	Demonstrate how to propagate plants	3.1	Sow two different kinds of seeds in different growing mediums: open ground and a tray under glass.		
		3.2	Prepare ground: sow tubers and rooted plants.		
4	Demonstrate how to grow and care for plants grown from seed	4.1	Sow seed directly in ground and then thin out.		
		4.2	Sow seed in trays, prick out and plant in prepared ground		
		4.3	Follow a given maintenance plan		
		4.4	Identify any pests/diseases 6a.		

Student name...

F4

Use and Maintain Woodworking Tools (tutor sign off sheet)

	Learning Outcomes		Assessment Criteria	Evidence	Assessor	Date
	The learner will:		The learner can:			
1	Use tools safely	1.1	Observe correct health and safety procedures in relation to handling tools used in a workshop			
2	Show familiarity with manual tools and their uses	2.1	Name four manual tools used in carpentry and state their use			
		2.2	Demonstrate the correct use of two hand tools			
3	Maintain and store manual tools	3.1	Use a wheel or oilstone to correctly sharpen a bladed manual tool			
		3.2	List two points to take into account when storing tools			
4	Show familiarity with electrical tools and their uses	4.1	Name three electrical tools used in carpentry and state their uses			
		4.2	Use a range of electrical tools correctly to • A) drill holes in timber • B) saw timber • C) sand timber • D) insert screws			
5	Maintain and store manual tools	5.1	Identify when a tool needs sharpening			
		5.2	Identify and conduct a safe wiring check			
		5.3	List two points to take into account when storing electrical tools			

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Follow this structure during telephone interviews.
1) Explain who I am. Thank parents for returning the consent forms and ask if this is a good time to talk.
2) Explain briefly the background to Forest School research and why and how I am planning on conducting this evaluation.
3) Explain that I will only speak to their child informally alongside the activities, if the Forest School leaders feel it is appropriate.
4) Ask whether they have any questions they would like answering.
5) Ask if they have had enough information about the study.
6) Clarify elements on the form regarding consent, if necessary.
7) Explain that parental views are very important and ask if they are happy to answer a few questions about their child's experience of Forest School.
8) Ask parents (open questions) if they think Forest School has made any difference to their child. If necessary, use promotes related to the CMOs, including speech, confidence, motivation, behaviour, risk-taking, favourite activities, whether they go to the woods outside of school time.

Parent of Pupil 1 (Code G1)

1. What impact, if any, has Forest School had on your child?

Pupil enjoys being outside anyway, and also does the Duke of Edinburgh award and explorer scouts. Being at Forest School helps in that he has more skills when outdoors [1d] doing his other projects [6g]. Um, we go on camping holidays and before, he would just stand there like a lemon. Now, he will have an idea of what to do and will be able to get on and do it. If he's unsure, he's quite good at asking for help.

2. Do you think going to Forest School has changed how he is in school?

Being able to have a go has also been noticed in other areas of his learning too. He's also very motivated to get involved with things across the board.

3. Does he enjoy going to Forest School?

Yes he really likes it, he likes cooking there.

4. Has he learnt new skills from Forest School?

Yes, in the outdoors he's much more confident with doing things because he's got an idea of how to start [8a]. He's also starting college in September where he'll study animal care and horticulture, he's learning about a lot of this already at Forest School. Forest School is really positive for him and helps him with various bits and pieces [6g].

6. Are you happy for me to contact you in the future in case there is something I've forgotten to ask you now, please?

Yeah no problem.

Parent of Pupil 4 (Code G4)

1. What impact, if any, has Forest School had on your child?

Forest School has given pupil 4 a lot of confidence. Academically, he's not going to excel, but he's found something he's good at and he's knows he's good at it. When he leaves school in a couple of years he now wants to do woodwork and carpentry which is because he's been doing that sort of thing at Forest School (6g). At school he made a door frame which he could do because of the things he'd made at Forest School. He's made a bird box there too and is making another for his Nan (1a).

2. Do you think going to Forest School has changed how he is in school?

When he's sitting in a classroom he'll mess around but at Forest School he's doing something all day and at the end of it feels he's done something. It takes him about of school and he doesn't realise that he's learning in the woods. You have to trick him into learning things, at Forest School he learns things but doesn't know.

3. Does he enjoy going to Forest School?

Yeah, he comes back from Forest School saying all sorts of things he's done, it makes him more eager. He makes his own packed lunch now for Forest School and gets his own clothes ready. He wants a new pair of boots to wear – steel toe caps. He'll go into the woods near the house on his own – he used to do this but does it more now (8a). He's better at understanding how things are done – for example he's more specific about how to unload the dishwasher and takes the fluff out of the tumble dryer to Forest School as it's good for starting off the fires. He likes how they're treated there and are given responsibility (4a). In school he wouldn't be given a knife or a mallet – there'd be a big drama (1e).

4. So, he's learnt a lot of new skills since being at Forest School?

Yes. Now, I'll say to pupil 4, can you go and fix the shed? Now he'll go and try to do it (6b) and he likes it that he's being trusted to use the tools to do it (1d). He's got calmer since going to Forest School but he's even more calm there, he'd probably excel with them (9a). In school he still has problems in his lessons. But at least I know they'll be no problems on a Thursday.

5. What's his behaviour like at home?

Behaviour in home is ok, just like normal teenage behaviour really. Forest School definitely gives him more confidence (1a). If they could incorporate it into school it would work really well for pupil 4. Say, in Art they could design something to build there. There could be more links with what they do in school. Like in English they could write about it and he probably wouldn't know he was doing it.

6. Are you happy for me to contact you in the future in case there is something I've forgotten to ask you now, please?

Yes that's fine.

Appendix 8.11 Semi-Structured Interview Transcripts with Pupils

(P = Pupil, R = Researcher)

Pupil 1

R – What do you think of Forest School?

P - it's good. Have you, have you started recording? Yeah?

R – yeah, but don't worry. What are the sorts of things you like?

P – it's good, erm, making the fire, er, being here with friends

R – you seem like quite a close group actually, like you know each other quite well

P – yeah we do

R – so how's it different from being at school?

P – well, er you don't have like a… almost a set task, in a way.

R –so can you tell me a bit more about what you mean?

P – what I mean is er you get to choose kind of what to do in a way [1d]. What like you still have to do something.

R- ok, but you can choose so it's not somebody telling you what to do all the time

P – yeah, yeah but there's usually um, some other set, obviously rules in a way like making the fire obviously first before doing anything else

R – oh ok so there's some things that you have to do but it's…

P- yeah but whatever you do after that is your choice [1c]

R – right ok, and what do you think you've learnt here?

P – well, how to like basically er er well make you know, stuff out of wood if you know, like, using like natural resources in a way, also using allotments aswell [6i]

R – ok, and do you think those are things that you might not have learnt how to do if you hadn't have come here?

P – yeah

R – what do you think you've got better at since you've come to Forest School?

P – um… er, I think I've got a bit more confident in a way

R – ok, yeah? A bit more confident, anything else?

P – er, knowledge of like other things, er woodwork, so like, like tool stuff, like I've not usually used in er daily life [6j]

R – oh yeah so like the um saw, and..er what's that one called? That B was using to chop the wood up

P – the axe? Or the…

R – it's not the axe it's the other one.

P – oh it has, it's like a curve, it's like a right angle in a way?

R – yeah, what's that called?

P- it's called… er….can't think

R – (seeing a chopping tool) is it that?

P – no, that's the axe. Um…

A – you know that, what am I doing?

P – oh the throw, there we go. The throw.

R –So are you always quite keen to take part in the activities?

P – Mostly yes.

R – uhhuh, so which, what are the best ones you're always quite keen for?

P – well um usually the fires and things. Yeah.

R – what would you prefer not to do?

P – um I don't know to be honest, I can't really think of anything.

R- that's fine. How do you feel when you're here?
P – um, in what way, what do you mean like um?
R- do you feel, so thinking about feelings you could have, they're things like angry, happy, relaxed, calm, it's all those things, those feelings. What kind of feelings do you get when you're here?
P – um, like so er hum, so relaxed I guess [(9a)].
R – yeah, anything else?
P – um, no not really I don't think so…
R – that's fine thank you. If you don't know that's fine just say you're not sure. And if say another student, not one of these here, a different one at school or somebody that you know out of school said to you 'should I go to Forest School?' what would you say to them?
P – er, I think it's it's nice here, they might enjoy it. If they like, like, like woodwork and that, if they like making fires and that so
R – yeah, so if I didn't know anything about Forest School and I said to you 'my school are saying that I should go', would you tell me to go or not?
P – yeah, to get a bit of er, a taster for it, like a one day and then see if you like it and then you can go again if you like
R – yeah, do you think it's a good thing for everyone?
P – yeah, I think, I think if it's, I think it's a good idea for everybody to seriously have a little try for it
R – um, and then they can make the choice I suppose?
P – yeah
R – so what do you want to do after school, when you leave school?
P – well I want to go into like animal welfare in er X college in like September or so
R – brilliant, so is that all sorts of animals?
P – well I think sort of, yeah
R- ok, so I'm thinking of cats and dogs, or farm animals, or zoo animals?
P – well can be um, depends really, I'm more keen on domestic type of animals
R – um, ok that's interesting. Do you think anything you have learnt while being at Forest School will help you, do you think you will use it at school, or at home or at work?
P – er well, it might help me in like the animal welfare because obviously it's not just like um obviously like not just, not said this yet but um Ade here is taught me a few erm plants as well that I didn't know about [(6g)]
R – so you think that might be a part of the course aswell, the plants as well?
P – yeah it might be part of the course
R – oh ok
P- because I never know if they'll like they'll ask me, oh what type of plants would they, would be poisonous to be honest [(3b)]
R – oh course, so like ragwort is poisonous to horses isn't it, that kind of stuff
P – yeah
R –is there anything else that you think you've learnt here that you will use again in your future?
P – most likely. Er, it depends on what er, what circumstances might be there to face to be honest
R – yes I see what you mean
P – yeah, the future's quite unpredictable to be honest

Pupil 2 (P = Pupil, R = Researcher)

R – thank you very much for agreeing to have a chat with me, so what you think about Forest School?

P – it's good

R – yeah?

P – doing outdoor skills and stuff like that [6i]

R – ok, so the things you like are learning the outdoor skills. Anything you don't like?

P – no

R – so how's it different from being at school?

P – you don't write or nothing

R – yeah, anything else?

P – it's interesting about learning about different stuff

R – uhhuh, so when you say different stuff what kind of stuff do you mean?

P – like wood, birds, like animals

R – yeah, like that dead mole? Poor thing!

P – yeah

R – and what have you learnt here?

P – er, how to use a knife, stuff like that… [6i]

R – yeah, take your time and have a think back, is there anything else that springs to mind?

P - no

R – ok, thank you. So what do you think you've got better at since you've started? You've been coming for two years now haven't you so just sort of thinking back, what skills have you improved with, do you think?

P – using the saw and cooking

R- so do you do those sorts of things at home a bit as well now?

P – yeah

R – ok. Do you always want to take part in activities?

P – yeah

R- so if I asked what your very favourite activities were what would you say?

P – don't know

R – what about your least favourite ones, what would you kind of prefer not to do?

P – bringing the wheelbarrows down

R – so, thinking about your feelings, so things like happy, sad, angry, relaxed, calm, those sorts of things, when you're here, how do you feel?

P – relaxed [9a]

R – yeah, anything else?

P – no

R – ok, so if another pupil who'd never been to Forest School before said to you, the school has said that I can go, should I go? What would you say to them?

P – I'd say yeah

R – why would you say yes?

P- because then you can always help them

R – ok, if you couldn't go to Forest School anymore because you're leaving now aren't you, but say a pupil in Year 9 at school said Mrs X has said I can go, why would you say yes?

P – because you can learn like how to use a saw
R – ok, yeah, any other things?
P – knives, about health and safety and stuff like that (1e)
R – so you learn about how to use them properly and safely?
P – yeah.
R – ok, so after school you're going onto college, is that right? (P – nods) what would you like to do when you finish college, for a job?
P – I don't have a clue
R – not sure? Do you think anything that you have learnt at Forest school might be useful to you in the future, so maybe at school, at college, at home?
P – making chairs
R – ok, so you think you might do that again and you've got some skills so you could do that?
P – nods (6g)
R – anything else you might use again?
P – don't know
R – not sure? is there anything else you want to tell me about Forest School?
P – no
R – ok, thank you very much. Is there anything you want to ask me?
P - no

Pupil 4 (P = Pupil, R = Researcher)

R – so what do you think of Forest School?
P – good
R – yeah? What are the best things about it?
P – you have a laugh with A and B (7a)
R – yeah, and the things you don't like?
P – er, it's a bit boring sometimes (11h)
R – yeah, so if there's not something actually going on at the moment
P – yeah
R – so how's it different from being at school?
P – lot different, (laughs) er you er do more stuff like you do stuff like being creative and stuff (6e)
R – so you can be creative?
P – yeah
R - what do you think you've learnt here?
P – like you learn how to build stuff from scratch (6i)
R – right ok, you do quite a lot with wood don't you?
P – yeah
R – are you still making your birdhouse?
P – yeah, I've made that
R – anything else you think you've learnt here?
P – er, how to start a fire properly. Cooking.
R – so what do you think you've got better at here?
P – er, listening
R – ok, was that something that was a bit tricky for you before?
P – yeah
R – so how do you think that's happened?

P - because if you don't listen you can't use the knives [(6h)]

R – so if you don't listen you won't be able to use them, ok, that's really interesting. And do you always want to do the activities?

P – sometimes, depends what I'm feeling like

R- yeah, depends sort of, what's going on? Any activities you prefer not to do?

P – no, as long as it's something fun and practical

R – yeah, and how do you feel when you're at Forest School?

P – like you can have a laugh with your mates [(2a)]

R – yeah, so, thinking about feelings they're things like happy, sad, what would you say you were feeling like down here?

P – having a laugh…

R – yeah, so fairly chilled out?

P – yeah [(9a)]

R – and if say cus' you're Year 10 now aren't you, so if say a Year 9 pupil from school came up to you and said, X, school are saying that I'm allowed to go to Forest School, should I go? What would say?

P – yes

R – yeah? why would you tell them to go?

P – because you can be creative and stuff and make things

R – right, and make things that you can then take home?

P - yeah

R – what do you want to do after school?

P – carpentry

R – ok, do you think you've learnt anything at Forest School that you will use again either at school, home or work?

P – yeah, woodwork. Making things [(6g)]

R – have you got any questions for me?

P – no

R – ok thanks for that, thanks for answering my questions

Appendix 8.12 Teacher and Forest School Staff Questionnaires

Questionnaire – Forest School Research

Thank you for giving your consent to participate in this study by filling in this questionnaire. As you know, I am interested in the effects of Forest School on the development of young people, and would very much welcome your views of this pupil's experience.

Name of Pupil……………………………..

Please mark in the box with a tick your view of the nature of any changes seen since this pupil started attending Forest School at the beginning of Year 10.

	Marked improvement	Slight improvement	No change	Deterioration	Don't know
1. Has this pupil's confidence to start an interaction with another child changed?					
2. Has this pupil's confidence to start an interaction with adults changed?					
3. Has this pupil's confidence to approach new tasks or experiences changed?					
4. Has this pupil's ability to understand danger or risk changed?					
5. Has this pupil's motivation to engage with learning opportunities changed?					
6. Have the speech and language skills of this pupil changed? (i.e. their ability to ask for what they want or hold a meaningful conversation)					
7. If this pupil has behavioural difficulties, have you noticed any change in their behaviour?					
8. If this pupil becomes anxious, have you noticed any changes in terms of their calmness?					

Please feel free to add any comments in addition to or explain your response to the questionnaire.

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In your opinion, has attendance at Forest School had any effect upon this young person? What changes have you observed? I would be grateful if you could outline your views on this below, please.

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Thank you very much for your time.
If you have any further questions please do not hesitate to get in touch with me (details provided to participants).

Table showing which members of staff completed questionnaire for which pupils

Pupil	FSL (Participant A)	FSL (Participant B)	TA (Participant C)	Pupil's Teacher at Oak School
1	X	X		
2	X	X		X
3	X	X	X	X
4	X	X	X	X

'X' marks where a staff member did complete a questionnaire about a young person. A total of 13 questionnaires were completed for the four young people attending Forest School by different members of staff who had known them since they started Forest School. The above table shows that four questionnaires were completed for both pupils 3 and 4, three questionnaire completed for pupil 2 and only two were completed for pupil 1.

Participant A works at Crows Wood and knew all the four pupils because of their attendance there. Participants B works at Oak School and is also a FSL who knows all four of the pupils from Oak School and because he takes them to Forest School for one day per week. Participant C knew the Year 10 pupils 3 and 4 because she is their TA at school and comes with them to Forest School every week. Finally, the form tutors at school working with pupils 2, 3 and 4 gave their consent to fill in a questionnaire about their perspective of any changes for the pupils.

The 13 questionnaires were collated to give the total responses for each question, e.g. for question 1 the ticks were added across the questionnaires and 54% of the adults completing questionnaires felt that the children they were focusing on had made a marked improvement in their ability to start an interaction with another child. Percentages were derived to give some understanding of the group response to Forest School.

Results from tick box questionnaire responses

	Marked improvement	Slight improvement	No change	Deteriorat-ion	Don't know
1. Have pupil's confidence to start an interaction with another child changed?	54%	38%	8%	0%	0%
2. Have pupil's confidence to start an interaction with adults changed?	31%	54%	15%	0%	0%
3. Have pupil's confidence to approach new tasks or experiences changed?	8%	85%	8%	0%	0%
4. Have pupil's ability to understand danger or risk changed?	8%	54%	31%	0%	8%
5. Have pupil's motivation to engage with learning opportunities changed?	15%	77%	0%	8%	0%
6. Have the speech and language skills of pupils changed? (i.e. their ability to ask for what they want or hold a meaningful conversation)	15%	62%	23%	0%	0%
7. If pupils have behavioural difficulties, have you noticed any change in their behaviour?	23%	31%	38%	8%	0%
8. If pupils become anxious, have you noticed any changes in terms of their calmness?	23%	38%	31%	8%	0%

Results from written questionnaire responses

Staff member	Commenting on?	CMOC Code	Extract
FSL (A)	Pupil 4	4b	Pupil 4's confidence has improved a lot, he will readily start a project and finish with minimal help, asking for help only if required.
Teacher	Pupil 2	3b/7c	When I visited Pupil 2 at Crow's Wood he was very keen to show me his achievements and explain to me some of the things he had learned about animal tracks etc. He freely initiated these conversations (something he had bee reluctant to do in the past).
Forest School and School TA (C)	Pupil 4	2b	He can tell others of danger issues
Forest School and School TA (C)	Pupil 4	2e	Pupil 4 is a different pupil at Forest School. He gets on with all the peers in the group, unlike the class setting. At Forest School they work as a team.
Forest School and School TA (C)	Pupil 3	2i	Pupil 3 interacts with a new member of the group that she doesn't always engage with in the school setting.
Forest School and School TA (C)	Pupil 3	3g	Pupil 3 tends to shrug her shoulders a lot and doesn't speak very much. In the class setting her confidence is very low. At Forest School she sits quietly and observes and once a relationship is formed with the adults she will communicate.
Forest School and School TA (C)	Pupil 3	4d 1a	Pupil 3 and another peer very confidently created/built projects together, pupil 3 taking the lead, giving directions and health and safety reminders. Her confidence increased in this setting where she has no confidence to complete tasks in school. her creations are often the best amongst her peers.
Teacher	Pupil 3	11g	I feel that Pupil 3's progress at Crow's Wood has not been transferred to her class setting due to the dynamics of the group at school.

- Child to have continued access to Forest School throughout their education
- Greater links between Forest School and the school curriculum
- Forest School to be accessible to all children

Improvements to the current programme

Hindering factors

- Young people's characteristics.
- Concern about exposure to bad weather
- Funding limitations
- Inconsistency in behavioural expectations
- Children may be new to a woodland
- Negative exterior influence on the young person

Forest School

- Confidence
- Social skills
- Language and communication
- Motivation and concentration
- Physical skills
- Knowledge, understanding of the world & independence
- New perspectives in adult/child relationships
- Ripple effects
- Emotional well-being & behaviour

Programme Outcomes

Enabling Aspects

- Support from SLT and Environmental Centre Staff
- Accompanied by TA from school who understands FS ethos
- A skilled Forest School leader embeds a child-led ethos, has a high level of practical skills and can relate to the young people
- The Forest School site is away from the school
- The wood is large enough for groups to have their own camps

Appendix 8.15 Case Study and Realist Synthesis CMOCs (Programme Specification 2)
1. Outcome - Confidence

Context	Mechanism	Outcome	Source	Data	
Among natural resources in a woodland setting where adults model things children can make	Child knows that creation is achievable (they have the materials and adults can help them to create)	Young person achieves at something new – receives positive feedback about their achievements which make them more likely to attempt other projects independently in future – develops a culture of enterprise	O'Brien and Murray (2005) Massey (2004) Borradaile (2006)	C Ep.9 G4 J3	1a
Sessions are regular and frequent, lasting throughout the school year	Children have the time and space to become more at home in an unfamiliar environment & experience regular success	Children demonstrate a greater self-belief in their capabilities and are confident to try new activities	O'Brien and Murray (2005) Knight (2011b) Ridgers, Knowles and Sayers (2012) Davis and Waite (2005)	A	1b
Children are taught routines for safe behaviour in the outdoors	The routines become embedded and provide a framework for safe exploration	Safe exploration enables confidence to be built through self-discovery	O'Brien and Murray (2005)	Ep.1,6 H1	1c
Children engage in child-led learning and choose from a diverse range of novel activities on offer set up by qualified FSL	Children initiate their own play and learning	Children are more likely to be confident to approach potentially challenging tasks	O'Brien and Murray (2005) Murray (2003) Knight (2011b)	A B D Ep.1,10 H1 G1 G4	1d
Exposure to risk of harm in the environment with adults who don't interfere too early,	Child must independently consider the risk/benefit and become more aware of the risk to their body	Children more willing and able to take risks in their learning and throughout life	Manyard (2007b) Massey (2004) Murray (2003)	A D Ep.2,5,6,	1e

			Knight (2011b) Waters and Begley (2007)	13 G4 F1	
Environment is physically away from the school	Different rules allow a permissive risk taking ethos	Children are more likely to take appropriate risks at Forest School (begins with physical and leads to intellectual risk taking)	Waters and Begley (2007)	A D H2	1f
High adult: child ratio means child can be supported/supervised on a task if required (e.g. building a shelter)	Child learns skills and need less help next time	Increased confidence in own ability and independence	Massey (2004) Waters and Begley (2007) Manyard (2007a)	Ep.6,15	1g
Adults also engage in activities and naturally make mistakes.	Children realise it is ok to make a mistake and are not told off or ridiculed.	Confidence to engage in tasks or persevere increases because they see they can't fail		B C D	1h
Young people are able to have some say in the rules	Young people understand the rules and have been able to think for themselves why these are necessary	Young people become more independent because they have to think for themselves in this environment		B	1i
Positive male and female role models endeavor to develop and maintain positive relationships	Children develop trust in the adults and meaningful relationships	Adults able to build positive self-esteem in children		A D	1j

2. Outcome - Social skills

Context	Mechanism	Outcome	Source	Data	
Children are given freedom to play independently of adult intervention	Children become more accustomed to working independently of adults and with other children	Children negotiate effectively with each other to achieve group tasks Children gain an increased awareness of other's personal space	O'Brien and Murray (2005) Massey (2004)	A C Ep.1,3 H4	2a

Children are encouraged to work together on tasks that require more than one person (such as moving things)	They begin to appreciate that more can be achieved in a pair or group and listen to each other	Children's listening skills improve and demonstrate more pro-social, helpful behaviour	O'Brien and Murray (2005) Massey (2004)	A D Ep.1,2,5, 6,8,10,11 F3	2b
Sharing of tools, tasks, resources (e.g. food/drink, fire lighting)	Children want to negotiate, share or work on tasks together	Children relate positively to members of their peer group and develop sharing skills	O'Brien and Murray (2005) Murray (2003)	A Ep.2,7,13, 15	2c
Environment presents risk of being hurt, e.g. brambles could cause scratches or trips	Children become more aware of the risks to themselves and others due to need to keep safe	Children become more aware of others and help them avoid danger and build trusting relationships.	Murray (2003) Waters and Begley (2007)	Ep.13	2d
Opportunities for teamwork	Children see joint creations	More likely to seek others in the future – teamwork becomes more natural	Murray (2003) Roe and Aspinall (2011b)	Ep.14 I1 J4 F4 F7	2e
Children see the physical consequences of their actions	Children become more aware of the consequences of their actions	Children take more time to consider the consequences of their actions in future	Borradaile (2006)	?	2f
Children have their basic needs met (food, water)	Children are not preoccupied with meeting basic needs	Children are able to focus on fulfilling needs for relationships leading to personal growth (Maslow, 1954)	Davis and Waite (2005)	A Ep.1,4,6, 10	2g
Children are free to move around in the environment and choose their activities	Children do not feel inhibited by rules and expectations	Shy children engage and communicate with others more, at Forest School and in the classroom	Davis and Waite (2005)	E	2h
Children can move around the environment and select their activities & peers to play with	Children experience success working with different groups of pupils from the classroom environment and see strengths of other children	Changes occur in the social hierarchy and new friendships are formed	Davis and Waite (2005)	A C J3	2i

3. Outcome - Language and Communication

Context	Mechanism	Outcome	Source	Data	
Opportunities for natural and spontaneous talk	Children recognise the need to communicate their ideas to peers on practical issues and through play	Children become better at cooperation as they are more able to negotiate verbally with others to achieve group tasks	O'Brien and Murray (2005) Davis and Waite (2005)	C Ep.2,8, 14	3a
Provides multi-sensory experiences/ real context for new vocabulary	They are motivated to discuss the multi-sensory experiences at Forest School	Children become more confident at communicating with peers and adults and talk about their experiences at Forest School in other contexts (e.g. home and school). They use more eye contact.	O'Brien and Murray (2005) Massey (2004) Borradaile (2006) Murray (2003)	Ep.1,6, 15 H1	3b
More variable and unpredictable situations than in a classroom	Children are motivated to use more descriptive language to describe the unfamiliar environment	Language skills are developed (verbal and written language). Questions become more specific	O'Brien and Murray (2005) Massey (2004) Borradaile (2006)	C	3c
Culture of free speech and no pressure to give the 'right' answer	Children learn that they won't be laughed at if they say something wrong or silly	Children are relaxed and speak more freely and naturally – frustration is reduced	Ritchie (2010) Davis and Waite (2005)	B D	3d
High ratios of adults to children	Frequent opportunities for adults to extend child speech through narrating their activities, asking questions or providing specific vocabulary	Extended spoken sentences and enhanced vocabulary	Davis and Waite (2005)	Ep.1	3e
Opportunities for teamwork over a sustained amount of time	Child feels more socially connected and accepted	More frequent natural speech and conversation occurs		A D	3f
No set structure to the day so time is available for activities and conversations	Children don't feel pressured to give answers to questions and not rushed to finish their sentences	Speech is more fluent		B	3g

Young person and adult have developed a positive trusting relationship	Young person feels comfortable to come to the adult to discuss issues or ask if they have questions	Young people learn by communicating what they want to know and 'learn without realising'. Shy children communicate more.		A C Ep.3 J3	3h

4. Outcome - Motivation and Concentration

Context	Mechanism	Outcome	Source	Data	
Opportunities for children to show responsibility (e.g. using knives, lighting fires)	Child has the choice to act responsibly and keep themselves and others safe	Child is motivated to be responsible so keeps themselves and others safe and has opportunities in the future	Borradaile (2006)	Ep.2,6,8, 15 G4	4a
Learning opportunities are meaningful and child-initiated allowing for imaginative, creative and explorative activities	?	Children persevere for longer on projects they are involved in. They are keen to attend and get ready more quickly (as opposed to reluctantly). They share their success with adults and peers away from Forest School They are more imaginative and eager to explore	O'Brien and Murray (2005) Massey (2004) Borradaile (2006) Murray (2003) Archimedes Training (2011) Knight (2011b) Ridgers, Knowles and Sayers (2012) Roe and Aspinall (2011b)	A D Ep.4,7, 8,11,12, 13 H2 I2	4b
Focus on developing the whole child as part of the Forest School experience	Children can focus and concentrate for longer periods of time on tasks and issues that interest them	Children demonstrate an increased knowledge of the environment. They strive to make sense of their surroundings and learn more.	O'Brien and Murray (2005)	B Ep.6	4c
Activities may have a large or small group element	Children have opportunities to be the leader	Increases motivation to take part	Massey (2004)	Ep.2 J3	4d

Children are out in all weathers (dressed appropriately) on a regular basis	Children come to feel safe in the environment and learn to take steps to look after themselves (wearing coats when cold)	Children feel comfortable to engage with the Forest School environment and weather is no longer a barrier to play	Massey (2004) Murray (2003) Ridgers, Knowles and Sayers (2012)	A	4e
No time constraints at Forest School	Young people don't feel pressured to finish and move onto something else	Young people can become immersed in activities and do this because they are intrinsically (as opposed to extrinsically) motivated.		B	4f

5. Outcome - Physical Skills

Context	Mechanism	Outcome	Source	Data	
The environment provides challenges which need overcoming, such as walking over rough terrain	Gross motor control is required to work within the environment	Increased gross motor control	O'Brien and Murray (2005) Swarbrick, Eastwood and Tutton (2004)	A B	5a
Children are required to handle tools and natural resources	In the pursuit of a task or goal at Forest School, children have the opportunity to make use of their fine motor skills and coordination	Improvements to fine motor stamina, control and hand-eye coordination	O'Brien and Murray (2005)	A D	5b
Children use physical skills continually in the Forest School environment	Continual physical feedback, strength building and exercise	Children acquire physical skills (such as strength, balance). They become fitter and begin to show more awareness of the space around them and become more self-reliant.	O'Brien and Murray (2005) Lovell (2009a/b)	A B	5c

6. Outcome – Knowledge, Understanding of the World and Independence

Context	Mechanism	Outcome	Source	Data	
Children are exposed to natural processes and features of a wild outdoor space	Children engage with the world around them and become more aware over time	Knowledge is gained and retained about flora and fauna and they want to take care of the wood and other environments, such as their gardens	O'Brian and Murray (2005) Murray (2003) Manyard (2007a) Ridgers, Knowles and Sayers (2012)	A Ep.1,3 ,10 F6	6 a
Learning is predominantly child-initiated and elements of the curriculum are presented in a practical context	Children are eager to discover things for themselves and they acquire an innate motivation to learn	Children learn information about the natural environment and develop skills Children are keen for their parents to take them out in the 'outdoors' more often to share their knowledge	O'Brien and Murray (2005)	A B Ep.2 G4	6 b
Children have time and space to consider problems	Children know they don't have to give an immediate response to a question and aren't rushed to tidy away	Children take time over solving problems and are more likely to be successful	Manyard (2007a) Swarbrick, Eastwood and Tutton (2004) Borradaile (2006) Knight (2011b)	E.p2,3	6 c
Exposure to curriculum areas of maths, science, music, literacy and language in real-life context	Learning is 'real' and meaningful at that time – abstract concepts become concrete	Children retain knowledge and develop a healthy attitude towards learning	Manyard (2007) Borradaile (2006) Murray (2003)	B Ep.3,4 ,9, 12,15	6 d
Child have opportunities to create in the natural environment	?	Creative thinking is enhanced	Borradaile (2006)	E.p7,8 H4	6 e

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Young people are exposed to changes in a natural environment over time and can see the effects they have on it (e.g. plants growing/clearing brambles)	Children take care to note changes and may purposefully watch something over time	Children's observational skills and awareness of the world improves.	Murray (2003)	A D Ep. 10, 13	6 f
Opportunities for skills and knowledge gained at Forest School to be linked to other contexts (school/home/college)	Children learn to link up experiences, knowledge and understanding when in other contexts	Skills, knowledge and understanding are transferred into other contexts	Murray (2003) O'Brien and Murray (2005) Ridgers, Knowles and Sayers (2012)	C H1 H2 H4 G1 G4	6 g
Skilled adults show children how to complete tasks when are they are interested in knowing	Children see the skills as useful to them and learn the importance of listening	Children learn the skill to a level of maintenance and listening skills improve	Vandewalle (2010) Murray (2003)	Ep.2,7 ,8, 11,13 H4 G1	6 h
Practical skill development is made more explicit by adults and is more observable to children than social dev.	Young people see Forest School as primarily for gaining practical skills	Young people focus on developing practical skills and this dominates their experience of Forest School	Davis and Waite (2005)	H1 H2 H4	6 i
Young people use tools including knives or powertools which they may not usually have access to	Young people are motivated to use the tools to make things	Safe use of tools and acquiring skills which they can use in other contexts (work/training/home)		A Ep.2,7 ,8 H1 F1	6 j
Opportunities for discussing issues e.g. items in the news, issues relating to College or employment	Young people feel comfortable to raise issues which they are considering	Young people learn and develop some independence from having questions answered and listening to others including the adults		A B Ep.12	6 k

7. Outcome - New Perspectives in adult/child relationships

Context	Mechanism	Outcome	Source	Data	
Pupils and teachers interact in an outdoor environment from the classroom	Pupils and teachers get a better understanding of each other and develop trust	Positive and lasting relationships/friendships are formed. High quality interactions occur and practitioners gain a better understanding of the children (e.g. individual learning styles). Children and adults have more respect for each other.	O'Brien and Murray (2005) Swarbrick, Eastwood and Tutton (2004) Roe and Aspinall (2011b)	A B C D H4 J2	7 a
Pupils and teachers in same outdoor environment	Pupils and teachers face the same challenges, e.g. coping with adverse weather	Relationships are ultimately more positive and understanding	O'Brien and Murray (2005)	B C Ep.1	7 b
There are opportunities to assess children in a different way	Adults see strengths which are not drawn out in the classroom	Adults have a more positive view and wider expectations	O'Brien and Murray (2005) Massey (2004) Borradaile (2006) Murray (2003)	J2	7 c
Forest School occurs regularly for at least one academic year	Young people have time to develop trusting relationships with the adults who actively listen to them and value their views	Young people trust that the adults genuinely want to support them		A J3	7 d
Children call adults by their first names and don't wear school uniform	Young people feel that they are being treated as adults and are on a more 'level footing' to the adults, rather than fighting for power in a more authoritarian relationship	Young people find it easier to develop positive relationships with the adults.		A B D	7 e

8. Outcome - Ripple effects

Context	Mechanism	Outcome	Source	Data	
Opportunities for demonstration of skills and knowledge in different contexts	Parents take more interest in Forest School due to children's enthusiasm	Children grown in self-esteem from having their achievements valued by their parents. Families visit woodland settings more often.	O'Brien and Murray (2005) Swarbrick, Eastwood, Tutton (2004)	G4	8a

9. Outcome – Emotional Well-being & Behaviour

Context	Mechanism	Outcome	Source	Data	
Regular access to a woodland environment	Environment has a calming restorative effect on the young people	Young person's mood is more positive (as measured by stress, energy, anger and hedonic tone)	Roe and Aspinall (2011a)	A D Ep.3,5 H1 H2 H4 G4	9a
Offers a different environment for pupils with difficulties (conflict at home, medical needs)	Enables children to have a different focus (non-effortful attention) and time to relax	Enhances resilience by reducing the impact of external difficulties	Murray (2003)	A Ep.14 I3	9b
Opportunities for repetitive physical activity, e.g. whittling sticks	Children can begin to use this as a 'coping strategy' to help them regulate their emotional state	Children use coping strategies to deal with anger so reduce episodes of challenging behaviour	Murray (2003) Roe and Aspinall (2011a)	Ep.1,2, 7,12	9c
Pupils are involved in creating the rules and can see why those rules are in place (safety reasons)	Young people understand the rules and boundaries and the reasons for them make sense	Children follow the rules of the setting and feel safe and calm. Fewer exclusions occur and attendance improves.	Murray (2003) Archimedes Training (2011) Ritchie (2010)	D	9d

Informal, relaxed environment which tolerates some swearing as long as it is not directed at another person	?	Less frequent inappropriate language		A D Ep.4,16	9e
Forest School is offered for one day per week & requires pupils to stay in school	Child think 'if my behavour is poor in school, I will not be allowed to go to FS'	FS can be used as external motivation for positive behaviour in school, which may include a reduction in swearing and smoking (although better behaviour is seen more at Forest School than in school)		B D	9f
Opportunities (space and resources) exist for free play without adult agenda	Young people are not restricted or embarrassed about playing or role play	Young people develop social skills which support their relationship building and limits conflict		B	9g
Forest School staff can be a positive role model who can act as a 'key adult' by developing a positive and trusting relationship	Young people are not inhibited to talk about their feelings or experiences with the Forest School leader	Young people develop their emotional literacy and can reflect on their experiences		A B C Ep.7,12	9h
Vast amounts of free space in the environment (not a typical 'school' environment)	Children do not feel physically trapped and are able to see around them	Young people feel safe (not under threat) within the environment and have a more positive mood. Behaviour is more compliant.		A	9i
Some rules are more relaxed, rules that are in place have safety reasons	Young people understand the rules and boundaries; they are more visible	Less conflict between adults and young people at Forest School in comparison to school		A Ep.15 I4	9j

10. Enabling Aspects

Context	Mechanism	Outcome	Source	Data	
Senior Leadership Team at school and Environmental Center support the programme by giving it time and believe it has positive effects	Forest School Leaders can be autonomous and feel trusted to implement the ethos of Forest School (including child-led, relaxed atmosphere)	The programme continues and is not undermined by professionals with different agendas such as academic results. The FSLs can promote a child-centered approach		A B C	10a
An additional adult from school attends who understands and supports the Forest School ethos. This increases the adult: child ratio.	All adults promote the same, child-centered approach and the additional adult can share information with the Forest School leaders and support the programme through additional supervision	Young people understand the Forest School ethos because the adults have a consistent idea of what it is. Forest School leaders understand the needs of the child		A C	10b
A skilled Forest School leader embeds a child-led ethos, has a high level of practical skills and can 'relate' to the young people	Young people notice the adult's skills and are impressed and eager to gain those same skills	A positive and motivated working relationship is established		A B C D Ep.2,4,5, 7,12	10c
The Forest School site is sufficient distance from the school site	Young people understand that the rules and boundaries are different from school	The young people's attitude is more positive		D	10d
Wood is large enough for groups to have their own 'camps' which they do not have to share with others	Prevents children feeling jealous or upset if their creations get moved	Prevents anger or poor engagement		B	10e

11. Hindering Aspects

Context	Mechanism	Outcome	Source	Data	
Bad weather conditions	Staff or children don't want to go to Forest School. Parents don't send their children to school for fear they will have to go to Forest School in the wet	Forest School is cancelled or staff/children are not enthusiastic so children don't enjoy it as much. Children don't attend on a FS day.	Swarbrick, Eastwood and Tutton (2004)	D	11a
The rules at Forest School are different to school and staff may allow behaviours which would not be acceptable in school	Some members of staff consider FS to be inappropriate due to children having little consistency in terms of behavioural expectations	Tension is caused between Forest School staff and school staff which may threaten the programme's ability to continue	Davis and Waite (2005)	?	11b
Environment is new and some children may lack experience in a woodland setting	Children feel frightened of the risks at Forest School (e.g. using knives and lighting fires) and the lack of visible boundaries	Children experience a negative emotional response (fear) and may not want to attend Forest School	Davis and Waite (2005)	?	11c
The young person's unique personal preferences, experiences or SEN	Young person finds it difficult to cope with changes in their environment or is not motivated to go to Forest School due to increased anxiety or dislike of the environment and activities	Young person may refuse to attend or participate in the activities. Forest School leaders are likely to raise this with school and arrange for someone else to come in their place. The Forest School experience is fundamentally voluntary.		A C D H4	11d
Exterior influences on the child/young person (e.g. unstable/abusive home life)	Young person cannot concentrate due to feeling distracted by external influences	Engagement with Forest School is hindered and their post-school path continues down a more negative route		A B	11e
Financial limitations to school budget	Funding is withdrawn for the programme/too many children sent so adults do not have time for individuals	Forest School is not a success because quality relationships between adults and children cannot be built or maintained Bp.2		C	11f

Children are back in lessons in school with other pupils who do not attend Forest School	Children are with peers who they do not have good relationships with and this interferes with learning in school	Progress made at Forest School (confidence/motivation/engagement) is not transferred to a school setting		J3	11g
Free choice and child-led activities	Children know they are not required to do anything	Young people may choose not to get involved in an activity and then get bored		H4	11h

Future development:
Access for wheelchair users (Swarbrick, Eastwood and Tutton, 2004) and Forest School for all children (Participant B)
Forest School to be continuous for all children (Participants A+B)
More links between Forest School and the curriculum in school (Parent G4)

Focus Group Realist Interview Plan
Laura Southall - Trainee Educational Psychologist

'Using Realistic Evaluation to evaluate 'Forest School' with Young People aged 14-16 with Special Educational Needs'.

Research reminders
• Your participation is entirely voluntary
• You are free to decline to answer any questions
• You are free to withdraw at any time
• Everyone's ideas are valued and respected

Background to this Focus Group
You are being asked to reflect individually and as a group, on a developing 'programme theory', which I am going to share with you today. This programme theory has been developed from your interviews and the existing literature regarding what others have said about how Forest School works. The aims of this research is to find out 'what works, for whom in which circumstances'.

Aim of the Focus Group
You are very important in this research and together we are developing a theory about how Forest School works for vulnerable young people. I would like you to read through the programme theory I have developed, comment on it and rank each statement in terms of importance to programme success, please. Your comments will help to refine the theory further.

The programme theory has been developed by identifying possible mechanisms, contexts and outcomes which explain how the programme works. It is based on the thinking that outcomes can only occur when the contextual features are correct and can trigger a mechanism, as illustrated in this diagram.
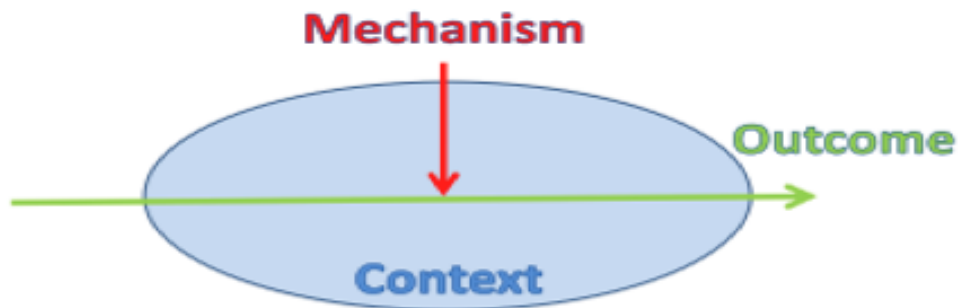
For example, if someone is trying to ignite gunpowder, they would need to ensure the conditions of the context are right (gunpowder is dry, sufficient in quantity, enough heat applied) to ensure that the required mechanism of change (a chemical reaction) can occur to produce the explosion (outcome).
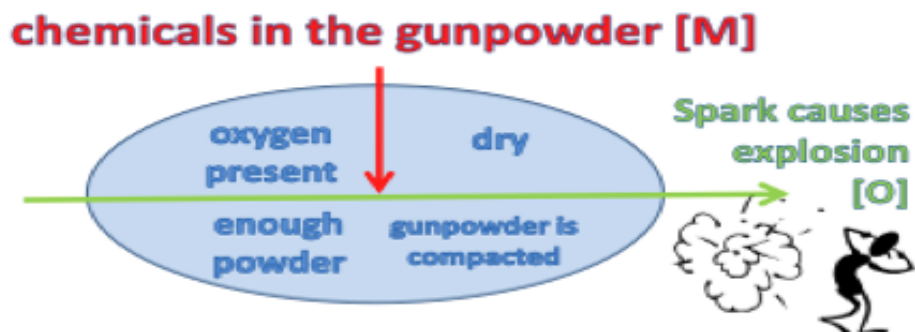
Mechanisms = Often hidden processes of how change occurs, e.g. how the resources on offer affect the thought processes of the young people (why a programme works).

Contexts = settings within which the programmes are placed OR factors outside the control of programme designers, e.g. people's motivation, organisational contexts/structures.

Outcome Patterns = i.e. what happens as a result of Forest School.

<u>Getting Started</u>

1. Individually, please look through the Context, Mechanism and Outcome (CMO) configurations and consider whether there are any changes (rewording/deleting/adding) required. As you go through each section, please also rank the CMOs in terms of how important you think they are to Forest School, using the following guide.

1	Critical
2	Ideal
3	Partially important
4	Not important

2. Next, please come together again as a group and have a short discussion about each theme to include whether any changes should be made to the CMOs.

With your consent, I would like to record todays meeting to enable me to use your comments to refine and finalise the programme theory. Please sign the consent sheet attached if you agree to this.

Thank you very much for your time today. Once I have completed the analysis I will send you a brief report on the research.
If you have any further questions, please contact me on 01905 822456.

- -

I…………………………………………. agree that this focus group meeting can be recorded and that my information can be used to refine and finalise the programme theories.
Signed:……………………………………………………………………… Date: 8th January 2014

Appendix 8.17 Notes from the Realist Interview

8.1.14

Notes from the Realist Interview (RI)

Researcher + Participants A, B, C + D.

- RI plan was read by each participant and consent gained.

① Individually, each participant went through their own copy of programme specification 2. They were asked to make notes about any changes or additions required (especially where there was a ?) and rank each CMOC.

② Then, a group discussion about aspects of the CMOCs was recorded. The researcher was also keen to focus on missing parts (with ?) to gain a complete data set by the end of the RI

Researcher notes from the RI group discussion included the following:

· Participants felt that Forest School worked differently for different young people, depending on their needs and characteristics. (cmoc 11d)

· Trust in relationships between young people and adults means that swearing is reduced. Young people trust adults not to report them if they do swear, so it is less of a 'big deal' + occurs less frequently (cmdc 9a)

- Forest School might only be used as a carrot if a young person is already at the school site as well - some are on alternative curriculums. (cmoc 9f)

- The Forest School programme can be carefully adapted to meet the individual needs of young people, but good communication between Crow's Wood and Oak School is required for effective planning. E.g. the camp may be closer to the Crow's Wood Centre if a child has mobility needs. (cmoc 10b)

- Young people see the consequences of their actions and learn from their mistakes, for example participants discussed a young man who had once thrown a piece of wood and then learned from this mistake. (cmoc 2f).

- Ripple effects were noted where practitioners had received positive feedback about their own creations at Forest School and noted the same happening for the young people. (cmoc 8a).

- Young people have time and freedom at Forest School to explore and create, in contrast to school where outcomes are pre-set. Activities are real and meaningful, they can express themselves and have a go. (cmoc 6e, 4b)

- FSLs and TAs know the young people well so are able to tell whether they genuinely need a break or are opting out of activities. If the former, other activity options are offered. (cmoc 11h).

- FSLs would like to take full classes of young people (ie. school class groups) but the groups are decided by senior leaders at school. This means that, at school, young people aren't always in lessons with other peers they have developed positive relationships with at Forest School, so conflict may be more likely. (cmoc 11g)

- Some school staff may not agree with the relaxed nature of rules at Forest School and more equal relationships between adults and young people (cmoc 11b)

③ Participants were asked whether any aspects of the programme had been missed or was incorrect. All four answered no to these questions.

④ Participants were thanked for their time and reminded of the researcher's contact details should they have further questions.

Appendix 8.18 Establishing Rankings during the Realist Interview

CMOC Code	Rank A	Rank B	Rank C	Rank D	Mean Rank
1a	1			1	1
1b	1			2	1.5
1c	2			1	1.5
1d	2			1	1.5
1e	1			1	1
1f	1			1	1
1g	1			1	1
1h	2			1	1.5
1i	1			1	1
1j	1			1	1
2a	1			2	1.5
2b	2			1	1.5
2c	1			2	1.5
2d	2			1	1.5
2e	2			2	2
2f	1			2	1.5
*2g	3			3	3
2h	1			1	1
2i	3			2	2.5
3a	1			1	1
3b	3			2	2.5
3c	3			1	2
3d	2			1	1.5
3e	1			2	1.5
3f	1			2	1.5
3g	1			2	1.5
4a	1		1		1
4b	1		1		1
4c	2		1		1.5

4d	2		2		2
4e	1		2		1.5
5a	1		2		1.5
5b	3		2		2.5
5c	1		3		2
6a	2	2	1		1.6
6b	2	2	1		1.6
6c	1	2	1		1.3
6d	2	3	2		2.3
6e	3	2	2		2.3
6f	1	2	2		1.6
6g	1	1	3		1.6
6h	1	1.5	2		1.5
6i	1	2	3		2
6j	3	2	2		2.3
6k	1	1	1		1
7a	3	1	1		1.6
7b	1	1	1		1
7c	1	1	1		1
7d	1	1	1		1
7e	1	1	1		1
8a	1	1	2		1.3
9a	2	1	2		1.6
9b	2	1	2		1.6
9c	2	1	1.5		1.5
9d	1	1	2		1.3
9e	1	2.5			1.75
9f	1	1.5			1.25
9g	1	1			1
9h	1	1			1
9i	2	1			1.5
10a	3	1			2

10b	1	1			1
10c	1	1			1
10d	1	1			1
10e	1	1			1
11a	2	4			3
11b	1	4			2.5
11c	1	4			2.5
11d	1	4			2.5
11e	1	4			2.5
11f	2	1			1.5
11g	3	4			3.5
11h	3	4			3.5

According to the ranking, 2g should have been 'partially important'. However, after the member check with a FSL, he asked that it's importance to be raised to 'ideal'. This is why tit appears in green in appendix 8.19.

Participants were asked to rank each CMOCs in terms of how important it was to programme success. Participants were asked to give a rank of 1 for critical, 2 for ideal, 3 for partially important and 4 for not important. However, two and sometimes three people ranked each CMOC and therefore averages were used. Gaining averages meant that CMOCs were not always ranked as a whole number, therefore a range of scores was needed to correspond to each CMOC. The following system was decided on:

0-1 Critically Important

1.1 – 2 Ideal

2.1 – 3 Partially Important

3.1 – 4 Not important

This system of ranking was decided upon so that CMOCs were only critical if all rankers gave a '1', so not to overestimate the findings. Also, the system had to end at 4 because that was the lowest number given.

Appendix 8.19 Final CMOCs (Programme Specification 3)
1. Outcome - Confidence

Context	Mechanism	Outcome	Source	Data	
Among natural resources in a woodland setting where adults model what children can make.	Child knows that creation is achievable (they have the materials and adults can help them).	Young people achieve at something new and receive positive feedback about their achievements which make them more likely to attempt other projects independently in future. A culture of enterprise develops.	O'Brien and Murray (2005) Massey (2004) Borradaile (2006)	B C Ep.9 G4 J3	1a
Sessions are regular and frequent, lasting throughout the school year.	Children have the time and space to become more at home in an unfamiliar environment.	Children experience success and develop a greater self-belief in their capabilities and become more confident to try new activities.	O'Brien and Murray (2005) Knight (2011b) Ridgers, Knowles and Sayers (2012) Davis and Waite (2005)	A B C	1b
Children are taught routines for safe behaviour in the outdoors.	The routines become embedded and provide a framework for safe exploration.	Safe exploration enables confidence to be built through self-discovery.	O'Brien and Murray (2005)	Ep.1, 6 H1	1c
Children engage in child-led learning and choose from a diverse range of novel activities on offer set up by qualified Forest School Leader (FSL).	Children are engaged and know they can follow their own interests and initiate their own plan and learning.	Children succeed and are more likely to be confident to approach potentially challenging tasks in the future.	O'Brien and Murray (2005) Murray (2003) Knight (2011b)	A B D Ep.1, 10 G1 G4 H1	1d
Exposure to risk of harm in the environment with adults who don't interfere too early, e.g. tool use, proximity to fire.	Child must independently consider the risk/benefit and become more aware of the risk to themselves.	Children more able and willing to take appropriate risks in their learning and throughout life.	Manyard (2007b) Massey (2004) Murray (2003) Knight (2011b) Waters and Begley (2007)	A D Ep.2, 5, 6, 13 F1 G4	1e

The environment is physically away from the school.	Children know that different rules apply and this allows a permissive risk-taking ethos.	Children more able and willing to take risks in their learning and throughout life.	Waters and Begley (2007)	A C D H2	1f
High adult: child ratio means child can be supported/supervised on a task if required (e.g. building a shelter).	Child learns from the adult helper and needs less help next time.	Increased confidence in own ability and independence.	Massey (2004) Waters and Begley (2007) Manyard (2007a)	Ep.6, 15	1g
Adults also engage in activities and naturally make mistakes.	Children realise it is acceptable to make a mistake and are not told off or ridiculed.	Children's confidence to engage in tasks and perseverance increases because they see they can't fail.		B C D	1h
Young people have some say in the Forest School (FS) rules.	Young people understand the rules and think for themselves why they are necessary.	Young people become more independent because they have to think for themselves in this environment.		B	1i
Positive male and female adult role models endeavor to develop and maintain positive relationships.	Children start to trust the adults and meaningful relationships develop.	Adults are able to build positive self-esteem in the children because they have a positive relationship.		A D	1j

2. Outcome - Social skills

Context	Mechanism	Outcome	Source	Data	
Children are given freedom to play independently of adult intervention.	Children become more accustomed to working independently of adults and with other children.	Children negotiate effectively with each other to achieve group tasks and increase their awareness of other's personal space.	O'Brien and Murray (2005) Massey (2004)	A C Ep.1,3 H4	2a
Children are encouraged to work together on tasks that require more than one person (e.g. moving logs).	They begin to appreciate the need to listen to each other and realise that more can be achieved in a pair or group.	Children's listening skills improve and they demonstrate more pro-social, helpful behaviour.	O'Brien and Murray (2005) Massey (2004)	A C D Ep.1, 2, 5, 6, 8, 10,11 F2	2b
Tools, tasks and resources need to be shared (e.g. food, knives, fire lighting).	Children need to negotiate, share and work on tasks together.	Children relate more positively to members of their peer group and sharing skills improve.	O'Brien and Murray (2005) Murray (2003)	A C Ep.2, 7, 13, 15	2c
Environment presents risk of being hurt (e.g. brambles could cause scratches).	Children become more aware of the risks to themselves and others due to the need to keep safe.	Children become more aware of others and help them avoid danger and build trusting relationships.	Murray (2003) Waters and Begley (2007)	Ep.13	2d
The environment presents opportunities for teamwork.	Children see the result of their joint creations.	Children are more likely to seek others in the future for tasks as teamwork becomes more natural.	Murray (2003) Roe and Aspinall (2011b)	B Ep.14 F2 I1 J4	2e
Children see the physical consequences of their actions.	Children become more aware of the consequences of their actions.	Children take more time to consider the consequences of their actions in future.	Borradaile (2006)	K	2f
Children have their basic needs met (e.g. food, shelter, water).	Children are not preoccupied with meeting their basic needs.	Children are able to focus on fulfilling needs for relationships leading to personal growth (Maslow, 1954).	Davis and Waite (2005)	A Ep.1, 4, 6, 10	2g
Children have free choice in the environment.	Children do not feel inhibited by rules or expectations.	Shy children engage and communicate with others more regularly.	Davis and Waite (2005)	Ep.7	2h
Children have free choice to play/work with different peer groups.	Children experience working with different groups of pupils and see strengths of other children.	Changes occur in the social hierarchy and new friendships are formed.	Davis and Waite (2005)	A C J3	2i

3. Outcome - Language and Communication

Context	Mechanism	Outcome	Source	Data	
Less structure provides regular opportunities for natural and spontaneous talk.	During activities, children recognise the need to communicate their ideas to peers on practical issues and in play.	Children become better at cooperation as they are more able to negotiate verbally with others to achieve group tasks.	O'Brien and Murray (2005) Davis and Waite (2005)	C D Ep.2,8, 14	3a
The environment provides multi-sensory experiences and a real context for new vocabulary, including unpredictable situations (e.g. weather changes).	Children are motivated to discuss the multi-sensory experiences at Forest School including use of new vocabulary.	Children become more confident at communicating with peers and adults and talk about their experiences at Forest School in other contexts (e.g. home and school). Children use more eye contact and questions become more specific.	O'Brien and Murray (2005) Massey (2004) Borradaile (2006) Murray (2003)	C Ep.1,6, 15 H1 J2	3b
There is a culture of free speech and no pressure to give the 'right' answer.	Children learn that they won't be laughed at if they give an 'incorrect' answer.	Children are relaxed and speak more freely and naturally because verbal frustration is reduced.	Ritchie (2010) Davis and Waite (2005)	B D	3c
High ratios of adults to children.	Frequent opportunities for adults to extend child speech through narrating their activities, asking questions or providing specific vocabulary.	Children's spoken sentences are extended and their vocabulary is enhanced.	Davis and Waite (2005)	Ep.1	3d
The programme provides opportunities for regular teamwork over a year.	Children feel more socially connected and accepted within the peer group.	Friendships develop and more frequent natural speech and conversation occurs.		A D	3e
No set structure to the day so time is available for activities and conversations.	Children don't feel pressured to give answers to questions quickly and are not rushed to finish their sentences.	Speech becomes more fluent.		B	3f
Young people and adults develop positive, trusting relationships.	Young people feel comfortable to come to the adults to discuss issues or ask if they have questions.	Young people learn by asking what they want to know and 'learn without realising'. Shy children communicate more.		A C Ep.3 J3	3g

4. Outcome - Motivation and Concentration

Context	Mechanism	Outcome	Source	Data	
There are opportunities for children to show responsibility (e.g. using knives, lighting fires).	Children are motivated to act responsibly and keep themselves and others safe, or not use the tools	Children are motivated to be responsible and keep themselves and others safe and have further opportunities to use tools in the future.	Borradaile (2006)	Ep.2,6, 8, 15 G4	4a
Learning opportunities are meaningful and child-initiated.	Children know they can structure their own activities to allow for imaginative, creative and explorative activities.	Children persevere for longer on projects they are involved in. They are keen to attend and get ready more quickly (as opposed to reluctantly). They share their success with adults and peers away from Forest School and are more imaginative and eager to explore.	O'Brien and Murray (2005) Massey (2004) Borradaile (2006) Murray (2003) Archimedes Training (2011) Knight (2011b) Ridgers, Knowles and Sayers (2012) Roe and Aspinall (2011b)	A B C D Ep.4,7, 8,11, 12, 13 H2 I2 K	4b
Activities may have a large or small group element.	Children have opportunities to be the leader of a large or small group.	Leadership increases motivation to take part.	Massey (2004)	Ep.2 J3	4c
Children are out in all weathers (dressed appropriately) on a regular basis.	Children come to feel safe in the environment and learn to take steps to look after themselves (e.g. wearing a coat when cold).	Children feel comfortable to engage with the Forest School environment and weather is not a barrier to play.	Massey (2004) Murray (2003) Ridgers, Knowles and Sayers (2012)	A B	4d
There are few time constraints at Forest School.	Young people don't feel pressured to finish activities and move onto something else.	Young people can become immersed in activities and do this because they are intrinsically (as opposed to extrinsically) motivated.		B	4e

5. Outcome - Physical Skills

Context	Mechanism	Outcome	Source	Data	
The environment provides challenges which need overcoming (e.g. walking over rough terrain).	Gross motor control is required to work within the environment.	Increased gross motor control and stamina.	O'Brien and Murray (2005) Swarbrick, Eastwood and Tutton (2004)	A B	5a
Children are required to handle and manipulate tools and natural resources.	Children need to use fine motor skills and coordination when undertaking tasks	Improvements to fine motor stamina, control and hand-eye coordination.	O'Brien and Murray (2005)	A D	5b
Children use physical skills continually in the Forest School environment.	Children are exercising continually, building their strength and receiving physical feedback.	Children acquire physical skills (such as strength and balance). They become fitter, show more awareness of the space around them.	O'Brien and Murray (2005) Lovell (2009a/b)	A B	5c

6. Outcome – Knowledge, Understanding of the World and Independence

Context	Mechanism	Outcome	Source	Data	
Children are exposed to natural processes and features of a wild outdoor space.	Children engage with the world around them and become more aware over time.	Knowledge is gained and retained about flora and fauna and they want to take care of the wood and other environments, such as their gardens.	O'Brian and Murray (2005) Murray (2003) Manyard (2007a) Ridgers, Knowles and Sayers (2012)	A B Ep.1,3, 10 F3	6a
Learning is predominantly child-initiated.	Children are eager to discover things for themselves and are intrinsically motivated to learn	Children learn about the natural environment and develop skills. Children are keen for their parents to take them out in the 'outdoors' more often to share their knowledge.	O'Brien and Murray (2005)	A B Ep.2 G4	6b
Children have time and space to consider problems.	Children know they don't have to give an immediate response to a question and aren't rushed to tidy away.	Children take time over solving problems and are more likely to be successful.	Manyard (2007a) Swarbrick, Eastwood and Tutton (2004) Borradaile (2006) Knight (2011b)	E.p2,3	6c
Exposure to curriculum areas of maths, science, music, literacy and language in real-life context.	Learning is 'real' and meaningful at that time – abstract concepts become concrete.	Children retain knowledge and develop a healthy attitude towards learning.	Manyard (2007) Borradaile (2006) Murray (2003)	B Ep.3,4, 9,12,15	6d
Child have opportunities to create in the natural environment.	Children want to express themselves and are able to have a go without fear of failure.	Creative thinking is enhanced.	Borradaile (2006)	C E.p7,8 H4 K	6e
Young people are exposed to changes in a natural environment over time and	Children take care to note changes and may purposefully watch something change or grow over time.	Children's observational skills and awareness of the world improves.	Murray (2003)	A D Ep.10,	6f

can see the effects they have on it (e.g. plants growing/clearing brambles).				13	
Opportunities for skills and knowledge gained at Forest School to be linked to other contexts (school/home/college).	Children learn to link up experiences, knowledge and understanding when in other contexts.	Skills, knowledge and understanding are transferred into other contexts.	Murray (2003) O'Brien and Murray (2005) Ridgers, Knowles and Sayers (2012)	B C G1 G4 H1 H2 H4	6g
Skilled adults show children how to complete tasks when they are interested in knowing.	Children see the skills as useful to them and learn the importance of listening.	Children learn skills to a level of maintenance and listening skills improve.	Vandewalle (2010) Murray (2003)	Ep.2,7, 8,11,13 G1 H4	6h
Practical skill development is made more explicit by adults and is more observable to children than social development.	Young people see Forest School as primarily for gaining practical skills.	Young people focus on developing practical skills and this dominates their experience of Forest School.	Davis and Waite (2005)	H1 H2 H4	6i
Young people use tools including knives or powertools which they may not usually have access to.	Young people are motivated to use the tools.	Safe use of tools and acquiring skills which they can use in other contexts (work/training/home).		A Ep.2,7, 8 F1 F4 H1	6j
Opportunities for discussing issues (e.g. items in the news, issues relating to College or employment).	Young people feel comfortable to raise issues which they are considering.	Young people learn and develop some independence from having questions answered and listening to others including the adults.		A B Ep.12	6k

7. Outcome - New Perspectives in adult/child relationships

Context	Mechanism	Outcome	Source	Data	
Pupils and teachers interact in an outdoor environment away from the classroom.	Pupils and teachers get a better understanding of each other and develop trust.	Positive and lasting relationships are formed. High quality interactions occur and practitioners gain a better understanding of the children. Children and adults have more respect for each other.	O'Brien and Murray (2005) Swarbrick, Eastwood and Tutton (2004) Roe and Aspinall (2011b)	A B C D H4 J2	7a
Pupils and teachers are in the same outdoor environment.	Pupils and teachers face the same challenges (e.g. coping with adverse weather).	Relationships are ultimately more positive and understanding.	O'Brien and Murray (2005)	B C Ep.1	7b
There are opportunities to assess children in a different way.	Adults see children's strengths which may not be drawn out in the classroom.	Adults have a more positive view of children and wider and higher expectations.	O'Brien and Murray (2005) Massey (2004) Borradaile (2006) Murray (2003)	J2	7c
Forest School occurs regularly for at least one academic year.	Young people have time to develop trusting relationships with the adults who actively listen to them and value their views.	Young people trust that the adults genuinely want to support them.		A J3	7d
Children call adults by their first names and don't wear school uniform.	Young people feel that they are being treated as adults and are on a more 'level footing' to the adults, rather than fighting for power in a more authoritarian relationship.	Young people find it easier to develop positive relationships with the adults.		A B D	7e

8. Outcome - Ripple effects

Context	Mechanism	Outcome	Source	Data	
Opportunities for demonstration of skills and knowledge in different contexts (e.g. home or school).	Children are enthusiastic about Forest School and talk about it in other contexts.	Parents become aware of their child's interest and children grown in self-esteem from having their achievements valued by their parents. Families visit woodland settings more often.	O'Brien and Murray (2005) Swarbrick, Eastwood, Tutton (2004)	G4	8a

9. Outcome – Emotional Well-being & Behaviour

Context	Mechanism	Outcome	Source	Data	
Regular access to a natural woodland environment.	Environment has a calming restorative effect on the young people.	Young person's mood is more positive (as measured by stress, energy, anger and hedonic tone).	Roe and Aspinall (2011a)	A B D Ep.3,5 G4 H1 H2 H4	9a
Offers a different environment for pupils with difficulties (e.g. conflict at home)	Enables children to have a different focus (non-effortful attention) and time to relax.	Resilience is enhanced and the impact of external influences reduces.	Murray (2003)	A B Ep.14 I3	9b
Opportunities for repetitive physical activity, (e.g. whittling sticks, hitting sticks).	Children can begin to use this as a 'coping strategy' to help them regulate their emotional state.	Children use coping strategies to deal with anger so reduce episodes of challenging behaviour.	Murray (2003) Roe and Aspinall (2011a)	Ep.1,2, 7,12	9c
Rules are more relaxed than school, and rules that do exist have safety reasons.	Young people understand the rules and boundaries and the reasons for them make sense to them.	Children follow the rules of the setting and feel safe and calm. Fewer exclusions occur and attendance improves. Less conflict occurs between children and adults.	Murray (2003) Archimedes Training (2011) Ritchie (2010)	B C D Ep. 15	9d
Informal, relaxed environment with trusting relationships between staff and pupils.	Young people trust the adults not to report inappropriate language to school staff if it is not directed at another pupil.	Less frequent inappropriate language at Forest School, in comparison to school		A D Ep.4,16 K	9e

Forest School is offered for one day per week & may require pupils to stay in school (although not all if on alternative curriculum).	Child think 'if my behavour is poor in school, I will not be allowed to go to Forest School'.	FS can be used as external motivation for positive behaviour in school, which may include a reduction in swearing and smoking (although better behaviour is still seen more at Forest School than in school).		B D K	9f
Opportunities (space and resources) exist for free play without adult agenda.	Young people are not restricted or embarrassed about playing or role-play.	Young people develop social skills which support their relationship building and limits conflict.		B	9g
Forest School staff can be a positive role model who can act as a 'key adult' by developing a positive and trusting relationship.	Young people are not inhibited to talk about their feelings or experiences to Forest School staff.	Young people develop emotional literacy and ability to reflect on their experiences.		A B C Ep.7,12	9h
Vast amounts of free space in the environment (not a typical 'school' environment).	Children do not feel physically trapped and are able to see around them.	Young people feel safe (not under threat) within the environment and behaviour is more compliant, in comparison to school.		A C	9i

10. Enabling Aspects

Context	Mechanism	Outcome	Source	Data	
Senior Leadership Team at school and Environmental Centre support the programme by giving it time and believe it has positive effects.	Forest School Leaders can be autonomous and feel trusted to implement the ethos of Forest School (including child-led, relaxed atmosphere).	The programme continues and is not undermined by professionals with different agendas such as academic results. The FSLs can promote a child-centered approach which supports positive outcomes for the pupils.		A B C	10a
An additional adult from school attends who understands and supports the Forest School ethos. This increases the adult: child ratio.	All adults promote the same, child-centered approach and the additional adult can share information with the Forest School leaders and support the programme through additional supervision.	Young people understand the Forest School ethos because the adults have a consistent idea of what it is. Forest School leaders understand the needs of the child because of good communication.		A C	10b
A skilled Forest School leader embeds a child-led ethos, has a high level of practical skills and can relate to the young people.	Young people notice the adult's practical skills which motivates them to learn the skills too	A positive and motivated working relationship is established.		A B D C Ep.2,4,5, 7,12	10c
The Forest School site is sufficient distance from the school site.	Young people understand that the rules and boundaries are different from school.	The young people's attitude is more positive.		D	10d
Wood is large enough for groups to have their own 'camps' which they do not have to share with others.	Children won't feel jealous or upset if the camp is shared and/or their creations get moved.	Prevents anger or poor engagement.		B	10e

11. Hindering Aspects

Context	Mechanism	Outcome	Source	Data	
Bad weather conditions.	Staff or children don't want to go to Forest School. Parents don't send their children to school for fear they will have to go to Forest School in the wet.	Forest School is cancelled or staff/children are not enthusiastic so children don't enjoy it as much. Children don't attend on a FS day.	Swarbrick, Eastwood and Tutton (2004)	C D	11 a
The rules at Forest School are different to school and staff may allow behaviours which would not be acceptable in school (e.g. some swearing).	Some members of staff may consider Forest School inappropriate due to children having little consistency in terms of overall behavioural expectations.	Tension is caused between Forest School staff and school staff which may threaten the programme's ability to continue successfully.	Davis and Waite (2005)	K	11 b
Environment is new and some children may lack experience in a woodland setting.	Children may feel frightened of the risks at Forest School (e.g. using knives and lighting fires) and the lack of visible boundaries.	Children experience a negative emotional response (fear) and may not want to attend Forest School.	Davis and Waite (2005)	K	11 c
The young person's unique personal preferences, experiences or SEN and lack of information for FS staff about these.	Young people may find it difficult to cope with changes in their environment or is not motivated to go to Forest School due to increased anxiety or dislike of the environment and/or activities.	Forest School staff change environment but young person may refuse to attend or participate in the activities. Forest School leaders are likely to raise this with school and arrange for someone else to come in their place. The Forest School experience is voluntary.		A C D H4 K	11 d
Exterior influences on the child/young person (e.g. unstable home life).	Young person may have difficulties concentrating due to feeling distracted by external influences.	Engagement with Forest School is hindered and their post-school path is undesirable (e.g. they enter the criminal justice system)		A B	11 e
Financial limitations to school budget.	Funding is withdrawn for the programme/too many children sent so adults do not have time for individuals.	Forest School is not a success because quality relationships between adults and children cannot be built or maintained.		B C	11f

If FS staff cannot take a full class, children are back in lessons in school with other pupils who do not attend Forest School.	Children may be with peers who they do not have good relationships with and this may interfere with learning in school.	Progress made at Forest School (confidence/motivation/engagement) is not transferred to a school setting.		C J3 K	11 g
Free choice and child-led activities mean young people may choose to sit quietly rather than get involved in an activity.	FSL judge whether quiet time is needed by the young person or they are choosing to not engage.	FSL has to motivate young person to stop them getting bored.		A H4 K	11 h

Future development:
Access for wheelchair users (Swarbrick, Eastwood and Tutton, 2004).
Need for policy makers to have a strategic overview and plan of how FS will be used (Borradaile, 2006)
Children benefit from more than 14-weeks of the programme (Archimedes Training, 2011)
Children from special schools to attend at a younger age (Participant A+B)
Need for Forest School leaders to have adequate background information on a child (Participant A)
More links between Forest School and the curriculum in school (Parent G4)