

**AN INVESTIGATION INTO THE PEDAGOGY IN A MAINTAINED NURSERY
WITH PROVISION FOR CHILDREN WITH SEVERE AND COMPLEX
ADDITIONAL NEEDS USING SOCIOCULTURAL APPROACHES TO EXPLORE
THE MEDIATION OF COGNITIVE DEVELOPMENT AND INCLUSION**

By

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ABSTRACT

The research was a case study into the pedagogy in a maintained nursery with a specialist provision for children with severe and complex additional needs (AN). It used conceptual frameworks developed within a sociocultural approach from Vygotsky's (1978) theory to investigate the mediation of children's cognitive development and inclusion, regarded as participation, by the pedagogy and practitioners. Rogoff's (1995) Three Planes of Analysis was adopted as a unifying conceptual framework to represent the pedagogy.

Data was collected from: semi-structured interviews with 13 practitioners working with children with and without AN in the mainstream and specialist provision; observations of Mediated Learning Experiences (MLEs) between practitioners and children with and without AN, and observations of two children, one with and one without AN during a session in the nursery. A thematic analysis of the data (Braun and Clarke, 2006) suggested themes relating to practice, learning and cognitive development and participation within the community plane; mediation of learning and cognitive development within the interpersonal plane and mediation of participation within the personal plane. Cultural Historical Activity Theory (CHAT) (Engeström, 1999) was used to show the interconnected activity systems that constituted the pedagogy within and between these three planes. Implications for EP practice were suggested.

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Abbreviations used:

| | |
|-------------------------------------|----|
| Educational Psychologist | EP |
| Severe and complex additional needs | AN |
| Mainstream | MS |
| Specialist Provision | SP |
| Nursery Teacher | NT |
| Teaching Assistant | TA |

CHAPTER 1

INTRODUCTION

The importance of early years education is widely recognised in the literature and in Government policy and guidance to ensure the best possible outcomes for all. Recent developments, including the review of the Early Years Foundation Stage (EYFS) guidance (Tickell, 2011; DfE, 2012), suggested that pedagogy and practice in early years education is continually developing to provide effective support that enhances and enables the learning and development of all children, particularly those who are most vulnerable.

The underlying proposition of this thesis is that all children, regardless of their ability, learn through social interaction with others and in social environments. This is particularly the case for children with severe and complex additional needs who need support and guidance from adults to make sense of their experiences and form meaningful associations that support cognitive development. The role of the adult in early years settings is significant to their learning and development in terms of the interactions and stimulation they provide.

For some children, a greater understanding of how they learn is required to inform the approach adopted. Educational Psychologists (EPs) can contribute to this, collaborating with practitioners to develop understanding of the individual child's development and interventions that might support this.

This thesis proposes that conceptual frameworks developed from Vygotsky's (1978) theory and within a sociocultural approach could be applied to inform EP practice in early years,

guiding assessments and interventions and consultations with practitioners. It is proposed that these frameworks provide the means to explore and investigate the pedagogy using approaches that are consistent with psychological theory.

1.1 Overview of Section

This section will introduce the focus for the research. It will refer to the literature in order to contextualise the research and the approach adopted. It will indicate how the research developed, as detailed in the subsequent chapters.

1.2 Focus of the Research

The research focused on the pedagogy in an inclusive setting with a specialist provision for children with severe and complex additional needs, including low incidence needs (DfE, 2011a) associated with Cerebral Palsy, Autism, Down's syndrome and rare chromosomal disorders. Inclusion was realised by all children having access to resources and activities across the setting (mainstream class and specialist provision). Children with severe and complex additional needs (AN) mainly accessed educare in the specialist provision (SP); however, some children had additional support to enable them to access sessions in the mainstream class (MS).

The research adopted a sociocultural approach and applied conceptual frameworks and constructs developed from Vygotsky's (1978) theory of learning and cognitive development to investigate the pedagogy by focusing on the ways in which practitioners (teachers and

teaching assistants) mediated children's cognitive development and inclusion through their actions, interactions, activities, roles and the social practices (e.g. routines) in the setting. It considered how useful these frameworks might be to describe pedagogy and practice in early years settings and for the practice of Educational Psychologists (EPs) working in early years.

The research referred to the construct of mediation (Wertsch, 1984; Kozulin, 1998) to consider the social processes associated with pedagogy, learning and cognitive development and inclusion within the nursery. Previous research into pedagogy in effective settings (EPPE: Sylva et al., 2004) highlighted the significance of interactions between practitioners and children. The research used the construct of Mediated Learning Experiences (MLE) (Kozulin, 1998) and Cultural Historical Activity Theory (Engeström, 1999) as conceptual frameworks to explore this further. It referred to Lave and Wenger's (1991, 1999) description of learning through social practices to consider inclusion as participation in the social practices of the setting (Jarrett, 1996; Booth and Ainscow, 2004; Flynn, 2005). The research applied Rogoff's (1990, 1995) Three Planes of Analysis as lenses to investigate the pedagogy at three levels: community, interpersonal and personal, as suggested by Flear (2002, 2003).

Rogoff (1995, 2003) argued that child development is a complex process of interconnected influences, including social, cultural and historical factors. It was suggested that cognitive development and inclusion are situated in sociocultural contexts and are inter-related because constructs about one might influence the other. It was hoped by using conceptual frameworks developed within a sociocultural approach the way the pedagogy might mediate both could be explored.

Adopting a sociocultural approach recognises that practice and pedagogy develop from the constructs and actions of practitioners in the setting. Constructs about cognitive development and inclusion inform the social practices, activities and interactions provided for all children and the ways these are differentiated to reflect the developmental needs of individual child attending the nursery. It was proposed that the practitioners' constructs about the pedagogy and practice in relation to learning and cognitive development and inclusion might constitute the pedagogy within the community plane.

Pedagogy in effective early years settings was extensively studied through the EPPE project (Sylva et al, 2004). This identified episodes of 'Sustained Shared Thinking' (SST) as significant to effective practice. The description of the SST seemed to share characteristics with mediation of learning through MLE. It was anticipated, therefore, that MLEs as pedagogical interactions between practitioners and children would be evident in the nursery. It was proposed that observation of MLEs might provide the context for investigating the pedagogy in terms of the mediation of children's learning and cognitive development within the interpersonal plane.

Lave and Wenger's (1991,1999) description of the process of increasing participation in social practices in settings and organisations reframes inclusion as participation according to individual need rather than according to perceived learning needs of groups of children within a whole setting pedagogy. This seemed consistent with Corbett and Norwich's (2005) finding that an inclusive pedagogy is either at the individual or whole class level rather than specialised to groups of children with shared needs. It was proposed that observing individual children with and without additional needs participating in a session might provide

insights into the pedagogy within the personal plane and the mechanisms that might mediate inclusion.

1.3 Justification for the Research

Although the research focused on the pedagogy in an inclusive setting, it developed from professional practice as the Educational Psychologist (EP) linked to the nursery. This role involved providing assessments of the strengths and needs of individual children attending the SP, including providing advice for the Statutory Assessment process, as outlined in the Special Educational Needs: Code of Practice (DfES, 2001). It also involved work at a systems level, facilitating a project with practitioners to develop inclusive practice across the setting.

The assessment practice developed from knowledge and understanding of Vygotsky's (1978) theory and the sociocultural approach, gained from study towards the EdPsychD. Rather than applying a deficit model, the assessments focused on what the child could do independently and what the child could do with support from an adult. Observations in the setting focused on the ways in which adults mediated children's learning to inform interventions that might support learning and, particularly, cognitive development in school.

This approach was informed by Vygotsky's (1978) description of the Zone of Proximal Development (ZPD) and descriptions about the processes involved in movement through the ZPD (e.g. Wertsch, 1984; Griffin and Cole, 1984; Tharp and Gallimore, 1988; Hedegaard, 1995; Anning and Edwards, 1999, 2004). Principles from Dynamic Assessment, as

described by Lidz (2003), were applied to reflect on and interpret the observations, particularly the mediation observed. Whilst Dynamic Assessment has been used to assess the cognitive development of individual children, most useful information has emerged from observing the interaction between the practitioner and child during a Mediated Learning Experience (MLE) (Kozulin, 1998).

Fleer's (2002, 2003) description and application of Rogoff's (1990, 1995) Three Planes of Analysis also informed the approach to assessment. The assessments gathered information about the child's interaction at three levels: with objects, others and the environment to inform differentiation of the child's learning experiences and the learning environment.

The opportunity to collaborate with practitioners to develop inclusive practice and to develop assessment practice over time prompted an interest in the pedagogy in the nursery. In particular, the ways in which this is differentiated to meet the needs and support the development of all children attending the setting. A particular interest is the ways in which practitioners mediate the learning and cognitive development of children with severe and complex needs: how this might be similar to and distinct from the experiences of children without identified needs who attend the nursery, and the implications this might have for inclusion.

1.4 Description of the Research

The research was a qualitative study of the pedagogy in the nursery. It adopted a case study method, as described by Yin (2009). It regarded the pedagogy in the nursery as a unique case,

influenced by the sociocultural historical context of the nursery, in particular, the practice and constructs of the practitioners. It was proposed that the nursery offered a distinctive pedagogy because of the separate provisions for children with and without AN, the presence and participation of some children with AN in the mainstream class and the opportunities afforded by the environment to share activities, resources, routines and contexts.

Data was collected about the pedagogy from different sources corresponding to the Three Planes of Analysis proposed by Rogoff (1995): semi-structured interviews with practitioners to elicit their constructs within the community plane; observation of MLEs between practitioners and individual children within the interpersonal plane and observation of two children, one with and one without AN during a typical session in nursery within the personal plane. Information was collected about practice, learning and cognitive development and participation within the community plane, learning and cognitive development within the interpersonal plane and participation within the personal plane.

It was hoped that collecting information from different sources would allow the data to be triangulated and contribute to a rich picture of the pedagogy and practices within the nursery.

The following chapters will describe the research in detail. Chapter 2 will outline the literature that has influenced the research, particularly conceptual frameworks developed within the sociocultural approach inspired by Vygotsky's (1978) theory. Chapter 3 will describe the methodology and methods used for data collection and analysis, and provide a justification for these. Chapter 4 will detail the findings from a thematic analysis (Braun and Clarke, 2006) of the data. Chapter 5 will discuss these findings in relation to the conceptual

frameworks that guided the research and the research questions. Finally, chapter 6 will conclude by summarising the significance of the findings for current and future practice in early years and EP practice, and indicate ways that the research could be developed in the future.

CHAPTER 2

LITERATURE REVIEW

2.1 Overview of Section

This section will describe the context for the research. It will situate the research within Educational Psychology (EP) practice and early years education. It will refer to the literature to define pedagogy and inclusion within a sociocultural approach. It will adopt Vygotsky's (1978) theory of cognitive development and refer to conceptual frameworks developed from this to explore the processes that might be involved in the mediation of young children's learning and inclusion, in terms of their participation in the nursery. It will suggest that Rogoff's (1995) Three Planes of Analysis could be used to investigate the pedagogy by focusing on mediation at three levels: personal, interpersonal and community.

2.2 Introduction

The research investigated the pedagogy in a maintained nursery with a specialist provision for children with low incidence Special Educational Needs (SEN), as defined by the SEN Green Paper (DfE, 2011a), by applying conceptual frameworks developed from a sociocultural approach to explore how the pedagogy mediated the cognitive development and inclusion of all children attending the setting. Various studies have applied sociocultural conceptual frameworks to early years education (e.g. Anning and Edwards, 1999, 2004; Flear, 2002, 2003), pedagogy (Flear, 2003), Educational Psychologist (EP) practice (e.g. Leadbetter, 2005) and inclusion (e.g. Jarrett, 1996; Flynn, 2005). Few studies have considered the pedagogy in

an inclusive setting attended by children with severe and complex additional needs and how EP practice might contribute to this. The lack of evidence for a distinct specialist pedagogy in the literature (Corbett and Norwich, 2005; Lewis and Norwich, 2007) suggested that the same conceptual frameworks could be applied to investigate the pedagogy for children accessing the mainstream and the specialist provision.

The sociocultural approach was developed from Vygotsky's (1978) theory of learning and development and situates learning in sociocultural historical contexts: in time and place (Van Oers, 2008). Fler (2002) suggested that:

“The sociocultural theory that has evolved from Vygotsky and those that followed has been rich and exceedingly useful for framing practices within early childhood education.” (Fler, 2002, p.109).

The aim of the research was to create a ‘rich description’ (Theodorou and Nind, 2010) of the pedagogy, pedagogical interactions and inclusion in the nursery at a particular point in time. A further aim was to explore whether the complex theoretical constructs considered could be applied to describe the pedagogy and whether they offered a theoretical basis that is relevant to EP practice in the early years. It was hoped it would contribute to research that applies a sociocultural approach to inform early years education and EP practice and establishes a role for EPs contributing to the development of pedagogy in early years settings to meet the needs of all children.

Government policy (DfES, 2007; DfE, 2011b) and research (Sylva et al., 2004) has recognised the significance of pedagogy to early years education and its contribution to long-term educational outcomes. The Effective Provision of Pre-School Education (EPPE) project

(Sylva, et al., 2004) demonstrated the link between effective pedagogy and positive outcomes for attainment and cognitive development. Recent Government guidance highlighted the importance of early intervention to narrow the gap in development and raise the attainment of children from the most vulnerable families (DfE, 2011b). Investigating and enhancing the pedagogy in early years settings might be conducive to this.

Recent Government guidance (DfE, 2011a, 2013) suggested opportunities for EPs to develop their role beyond their core function of statutory assessment (Mackay, 2002; Baxter and Frederickson, 2005). EPs could contribute to effective provision for all children, including those with SEN (Farrell, et al., 2006) by working with practitioners in early years settings to reflect on and develop practice and pedagogy (Dennis, 2004).

EP casework often arises from requests to identify and describe any SEN that children might have (SEN: Code of Practice, DfES, 2001), yet frequently results in suggesting changes to the pedagogy to enable teachers to meet the needs identified. Whilst the EP role is often construed as predominantly assessment-focused, the impact might be on the pedagogy. This could be a focus for EPs' contribution in the future (Daniels, 2005), particularly in early years.

As evidence-based practitioners (Frederickson, 2002), EPs need to identify psychological theories and models useful for describing and analysing pedagogy to identify changes that might contribute to effective provision. Leadbetter (2005) suggested that the sociocultural historical approach might be a useful paradigm for EPs to apply in practice and to explore the complex social systems associated with education. Edwards (2001) suggested that

sociocultural psychology could be applied to research pedagogy. It is therefore suggested that the sociocultural approach might offer conceptual frameworks that EPs could apply to enable practitioners in early years settings to develop pedagogy that meets the additional needs of children in their care.

2.3 EP Practice in Early Years Settings

There has been limited discussion in recent professional journals about EP practice in early years, despite reviews (e.g. DfEE, 2000; Farrell et al, 2006) and guidance (e.g. AEP, 2010) establishing a role. It might be appropriate to reconsider the role and contributions of EPs given recent developments, including the introduction of EYFS.

Dennis (2003, 2004) highlighted the potential demand for EP services following increased provision in early years, particularly in the non-maintained sector. She suggested EPs could contribute at three levels: strategic, systems and individual (casework) to challenge practitioners constructs about ‘within child’ characteristics associated with AN and situate needs in social systems and play (Wolfendale and Robinson, 2004; Robinson and Dunsmuir, 2010).

Shannon and Posada (2007) found that early years work was a feature of EP practice: much of it casework. Farrell and Wood (2006) suggested a lack of theoretical basis to assessment practice from a wider review of EP assessment practice.

Wolfendale and Robinson (2004) suggested assessment practice in early years was developing away from traditional, norm-referenced assessments towards Play-based Assessment (e.g. Linder, 1990) and Dynamic Assessment (e.g. Waters, 1999; Lidz, 2003). These approaches focus on play in context and development through mediation, usually necessitating the intervention of the EP. They provide an indication of potential development as well as actual development (Leeber, et al, 2011).

Shannon and Posada (2007) found EPs favoured observational methods because of difficulties implementing Dynamic Assessment in practice. They suggested that observations allow EPs to apply their knowledge and understanding of psychological theory and models to understanding child development.

Previous researchers have recognised the distinctive contribution EPs make applying psychological knowledge and systemic practice working collaboratively with practitioners to develop and evaluate interventions (Robinson and Dunsmuir, 2010). It is proposed that conceptual frameworks developed within a sociocultural approach could contribute to this.

2.4 Context for the Study

The nursery was situated in a North-West unitary authority and had a specialist provision for children with severe and complex additional needs. It was judged as ‘outstanding’ by OFSTED (HMI, 2010). This suggested it met the criteria of an effective setting, used in the EPPE project (Sylva et al, 2004).

The nursery offered a continuum of provision (Cole, 1999) to meet the diverse learning needs of the children: from specialist provision (SP) with a high level of individual support to supported participation and independent participation in the mainstream class (MS), as appropriate for the developmental needs of the child. The unique nature of the setting meant it provided a context in which the pedagogy could be investigated in terms of how it might mediate learning and development through pedagogical interactions (Siraj-Blatchford, et al., 2002; McInnes, et al., 2011) and inclusion in terms of children's participation in activities across the setting.

In common with all educate settings, the nursery adhered to the Practice Guidance for the Early Years Foundation Stage (EYFS) (DfES, 2007). McInnes, et al.'s (2011) study into the play and pedagogic interactions in two settings suggested that the implementation of the guidance might be realised differently in different settings and that each setting might represent a microculture with interactions influenced by the beliefs and theories about learning and child development held by practitioners working in that setting (Van Oers, 2008). This suggested the nursery could offer a particular sociocultural context for learning and development and it might be appropriate to apply conceptual frameworks developed within a sociocultural approach to explore this.

The research emerged from professional practice as the EP linked to the nursery working at an individual level: supporting the assessment of SEN of children attending the specialist provision, and at a systems level: facilitating a collaborative project with practitioners to develop inclusive practice across the setting. These activities were informed by research undertaken towards the EdPsychD, in particular conceptual frameworks developed within a

sociocultural approach. Assessment practice has increasingly focused on the interactions between practitioners and children and the mediation of learning, informed by dynamic assessment (Lidz, 2002, 2003) and Cultural Historical Activity Theory (CHAT) (Engeström, 1999). Consultation with practitioners through activities at both levels suggested that pedagogy and pedagogical interactions might be significant to the mediation of learning and inclusion.

2.5 Pedagogy in Early Years

Historically pedagogy in English education was regarded as didactic and focused on the transfer of knowledge (Alexander, 2000; Kansanen, 2002), however, pedagogy in early years education tends to be dynamic, interactive and play-based.

The Labour Government (1997 – 2010) commissioned a large-scale, longitudinal research project into effective pedagogy and practice in pre-schools: The Effective Provision of Pre-school Education (EPPE) project (Sylva, et al., 2004). The project sought to identify what worked in effective settings to inform Government policy. A range of criteria were used to identify effective settings, including OFSTED judgements, and data was collected about the practice and pedagogy in these settings using mixed methods. This was analysed to determine what might contribute to the effectiveness of the setting as indicated by long-term outcome measures for attainment and cognitive development. Pedagogy was regarded as situated within the interactions between adults and children and within the sociocultural context of the learning environment.

A significant finding from the EPPE project was the role of adults and their interactions with children in supporting learning and development through play. Sylva et al (2004) identified ‘Sustained Shared Thinking’ (SST) as a feature of effective settings, defined as:

“By this we mean an episode in which two or more individuals “work together” in an intellectual way to solve a problem, clarify a concept, evaluate activities, extend a narrative etc. Both parties must contribute to the thinking and it must develop and extend thinking.” (Sylva et al, 2004, p.36).

This definition describes a process of co-constructing the learning, similar to the mediation of learning described in Vygotsky’s (1978) theory of learning and development. It highlighted a significant role for adults mediating learning (Fleer, 2010).

The findings of the EPPE project informed the development of the Practice Guidance for the EYFS (DfES, 2007). This could be regarded as Government guidance on pedagogy in early years settings. A recent review of the EYFS (Tickell, 2011) highlighted the significance of adult-child interactions:

“The provision of meaningful interactions between adults and children to guide new learning is an essential element of the EYFS.” (Tickell, 2011. p. 29)

Dame Tickell (2011) recognised that the role of adults supporting learning through SST was ambiguous within the EYFS. She clarified this by referring to Vygotsky’s description of learning and development through mediation:

“A definition I have found very helpful describes this support as the difference between what a child can do on their own, and what they can do when guided by someone else – either an adult or more able child.” (Tickell, 2011, p. 29)

This seemed to situate contemporary pedagogy and practice within a sociocultural approach developed from Vygotsky's theory.

Many writers have advocated a sociocultural approach to pedagogy (Alexander, 2000; Pollard, 2001; Daniels, 2001; Leach and Moon, 2008), particularly in relation to pedagogy in early years education (Fleer, 2002, 2003, 2010; Anning and Edwards, 1999, 2004; Wood, 2004). Leach and Moon's (2008) description seemed to capture the complex, interactive, multidimensional qualities of pedagogy: it is viewed as a

“...dynamic process informed by theories, beliefs and dialogues only realised in the daily interaction of learners and teachers in real settings.” (Leach and Moon, 2008, p. 6)

As a consequence, the pedagogy in the setting was regarded as dynamic and transforming: it changes over time as a consequence of the various influences on the practices of those participating in the setting. It was regarded as involving the interactions, actions, activities, social practices, roles and routines of those who participate in the nursery and it might particularly involve the interactions between adults and children and the ways in which learning and inclusion is mediated through these interactions. It is recognised, therefore, that the research captured the pedagogy in the setting at a particular point in time and in its history.

2.6 Inclusion

Evidence from the literature highlighted the benefits of adopting an inclusive ethos in early years settings (Talay-Origan, 2001; Odom et al., 2004). Surveys of practitioners' views

conducted in the UK (Clough and Nutbrown, 2003) and Europe (Nutbrown and Clough, 2004) suggested broad support for inclusion in the early years sector. The review of the EYFS (Tickell, 2011) and subsequent publications, including the Statutory Framework for the Early Years Foundation Stage (DfE, 2012), embraced an inclusive ethos.

Views of disability inform constructs about inclusion. The widely accepted social constructionist view (Reindal, 1995; Oliver and Barnes, 1998; Lindsay, 2003; Alton-Lee, et al., 2005) situates disability as arising from the sociocultural context and as associated with sociocultural factors, such as values, attitudes, culture, and policy.

"The social constructionist model sees disability as not so much the result of a person's impairment, but as a product of social factors in the context in which s/he participates that create barriers and limits opportunities for equal participation." (Alton-Lee, et al., 2005, p. 99).

This definition situates inclusion as arising from the interaction of sociocultural factors associated with individuals, practices and the environment.

Discourses about inclusion often emphasise sociocultural constructs such as values and rights (Lindsay, 1997), justice, rights and needs (Cole, 1999), rights and social justice (Slee, 2001) and fairness (Barrow, 2001). These constructs are arguably socioculturally situated: they relate to time and place and will be influenced by those participating in settings and discourses about inclusion and disability by members of the community of practice (Purdue, et al., 2001). This suggested that it was appropriate to consider a sociocultural definition of inclusion.

Definitions of inclusion from the literature highlight the significance of participation (Booth, 1999; Ainscow, et al., 2000; Jarrett, 1996; Moran and Abbott, 2002; Booth and Ainscow, 2004). The emphasis is often on participation in a community of learners (Jarrett, 1996), community of practice (Dyson and Gallenough, 2007) or the sociocultural context of education. It has been suggested that inclusion is a contested construct (Lindsay, 2003; Cigman, 2007), multidimensional (Shamir, 2007) and difficult to operationalise (Lindsay, 2003). Lindsay (2003) advised focusing on an aspect of inclusion. Booth and Ainscow (2004) suggested that inclusion should focus on increasing the participation of all, whilst Flynn (2005) regarded participation as an essential foundation to inclusion. Booth and Ainscow (2004) defined participation as:

“Participation implies learning, playing and working in collaboration with others.”
(Booth and Ainscow, 2004, p. 3).

This definition is consistent with the ethos of the EYFS and sociocultural approaches that emphasise interaction and situate inclusion within settings and practices.

The research adopted a sociocultural definition of inclusion that emphasises participation and recognises features of the context, community, interactions between members of the community and mediation. It recognises the relationships and interactions between teachers and children (Corbett and Norwich, 2005), the significance of play (Theodorou and Nind, 2010) and practitioners’ views of learners, including regarding disabled children as ‘active meaning makers’ (p. 653) (Nind, et al., 2010).

If it is accepted that the nursery is a microculture (Van Oers, 2008) with its own set of values and cultural practices, and the culture of the setting is significant to inclusive practice (Ainscow, 2007), then it seemed appropriate to elicit the views of teachers and practitioners to describe the pedagogy and inclusion in terms of participation (Gibbs, 2007). Florian and Black-Hawkin (2011) suggested that practitioners' knowledge, attitudes and beliefs about learners and learning and observing the 'craft' of the teacher will be significant when describing inclusive pedagogy.

2.7 Cognitive Development

For the purposes of the research, cognition was regarded as acquired, modifiable and as arising from the interaction between ability, motivation, habits and attitudes through interaction, direct teaching and mediation (Hayward and Lidz, 2007). This definition implies that all children have the capacity to learn and develop. Vygotsky's (1978) theory of cognitive development informed the research.

2.8 Vygotsky's (1978) Theory of Learning and Cognitive Development

The sociocultural approach developed from Vygotsky's (1978) theory regards learning and development as socially, culturally and historically situated (Daniels, 2005). The child learns what is culturally relevant to the society in which they participate at a given point in time. This is relevant to the study as it suggests that changes in the social situation and culture of the nursery might affect the ways in which learning and development is mediated (Van Oers, 2008). It situates the study in time and place and recognises that external changes (e.g.

government policy) and internal changes (e.g. practitioners' views) might influence and alter the pedagogy over time.

This section will focus on the principles of Vygotsky's (1978) theory, as outlined in *Mind and Society*, that were felt to be relevant to the research:

- Social nature of learning.
- Mediation.
- Concept development.
- Zone of Proximal Development.

2.8.1 Social Nature of Learning

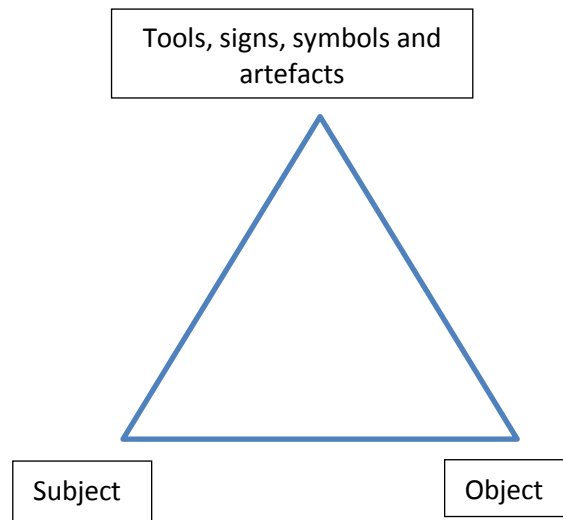
Vygotsky situated learning as occurring within social interactions, typically between the child and a more competent learner. The social origin of learning was described by Vygotsky as:

“Every function in the child's cultural development appears twice: first on the social level, and later, on the individual level; first, between people (interpsychological) and then inside the child (intrapsychological).” (Vygotsky, 1978, p.57)

2.8.2 Mediation

The mediation of learning through social interaction was a significant departure from the accepted behaviourist theory that posited that learning occurred through chains of stimulus-response relationships (Watson, 1913, cited by Shaffer, 1999). Vygotsky developed this to include mediation:

Diagram 2.1: Vygotsky's (1978) Original Model



(From Vygotsky (1978) *Mind and Society*)

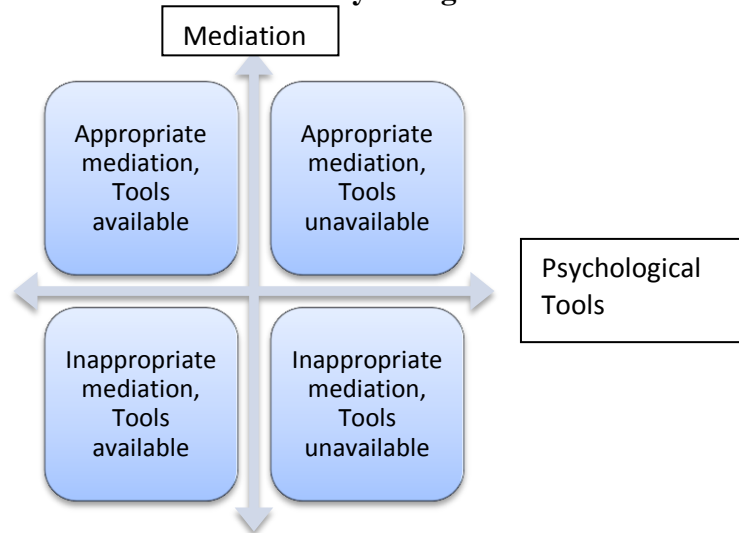
Vygotsky introduced the constructs of material tools (i.e. objects) and psychological tools as mediators that bridge the child's inner and outer world. Kozulin (1998) defined psychological tools as:

“Psychological tools are those symbolic artefacts, signs, symbols, text, formulaic, graphics, symbolic devices that help individuals master their own natural psychological functions of perception, memory, attention, and so on. Psychological tools serve as a bridge between individual's acts of cognition and symbolic social, cultural prerequisites of these acts.” (Kozulin, 1998, p.1).

These signs and tools become significant to the child through mediated activity: activity shared with and facilitated by others. It is proposed that the pedagogy is evident through the mediation given and the tools used to mediate learning and development. This might include artefacts, such as displays (Daniels, 2010) and the psychological tools that adults use to mediate ways of knowing and thinking.

Kozulin (1998) suggested that the interaction between the psychological tools available and the mediation given might account for individual differences in cognitive development:

Diagram 2.2: Interaction between Mediation and Psychological Tools



(Adapted from Kozulin, 1998)

This might account for individual differences regardless of ability or disability that could affect inclusion in terms of participation in the activities available. It might also reflect the ways in which the pedagogy is differentiated to take account of individual needs, for example, using communication approaches and providing support that is tailored to the individual. It suggested that the pedagogy could be investigated by collecting information about the psychological tools (e.g. language and communication approaches), material tools (e.g. toys and objects) and mediation used within shared activity between adults and children.

2.8.3 Concept Development

Vygotsky (1978, 1986) asserted that development proceeds via qualitative transformations of lower psychological functions, such as reflexes, simple conscious responses, spontaneous responses (Daniels, 2001) involving attention, perception and memory (Kozulin, 1998) into

higher psychological functions involving thinking, voluntary attention and logical memory (Wertsch, 1991) and problem-solving (Fleer, 2010) through mediation. He regarded language as a significant symbolic tool assigning meaning to objects. He suggested that gesture was an ‘initial visual sign’ (p.107) assigning meaning to the function of objects. This might be significant to the pedagogy in the specialist provision as systems of symbols (PECS) and signs (Makaton) were used to support communication.

Vygotsky described development as:

“We believe that child development is a complex dialectical process characterised by periodicity, and unevenness in the development of different functions, metamorphosis or qualitative transformations of one form into another, intertwining of external and internal factors, and adaptive processes which overcome impediments that the child encounters.”(Vygotsky, 1978, p.73).

Vygotsky (1986) described the development of the child’s spontaneous (everyday) concepts into scientific concepts through ‘systematic cooperation’ (p. 148) between the adult and child. ‘Everyday’ and ‘scientific’ concepts were defined as:

Table 2.1: Types of Concept Formation

| Everyday Concepts | Scientific Concepts |
|---|--|
| Unsystematic and unconscious (Kozulin 1998) Spontaneously acquired from immediate social, practical activity (Daniels, 2005) Develop from children’s natural learning through encounters with objects and activities at home and in preschool (Fleer, 2010) | Organised hierarchically, reflect cultural models of thinking (Kozulin, 1986). Develop through formal education, generalizable and under voluntary control (Daniels, 2005) Socially and culturally mediated through interactions with others (Fleer, 2010) |

Fleer (2010) suggested the social and cultural mediation of everyday concepts into scientific concepts through interaction with others was similar to SST, as described by Sylva et al, (2004).

It was proposed that the pedagogy in the nursery, as reflected by the activities, resources and interactions available, mediates concept development from ‘everyday’ to ‘scientific’. The child’s spontaneous play might develop through interactions with others, particularly adults. For example, a child’s play with an inset puzzle might be exploratory initially: exploring the properties of puzzle pieces and deriving sensory feedback from them. An ‘everyday’ understanding might develop. An adult might mediate this play by introducing new ways of using the pieces by completing the puzzle, enabling the child to discover new, scientific concepts about shape and size. Rodriguez and Moro (1999, cited by Van Der Veer, 2008) described this development as progressing from a non-conventional use of objects, to pre-conventional and then conventional use. This description might be relevant to the pedagogy in the specialist provision where much of the mediation might focus on enabling the children to use objects and toys in conventional (culturally acceptable) ways.

2.8.4 Zone of Proximal Development

An important principle of Vygotsky’s theory is that the child is not required to have reached a particular developmental level to be ready for new learning experiences. Instead, development lags behind learning, creating space for development. Vygotsky described this as a Zone of Proximal Development (ZPD):

“It is the distance between the actual development level as determined by independent problem-solving and the level of potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers.”(Vygotsky, 1978, *Mind in Society*, p.86)

The pedagogy in the nursery might function to create ZPDs for children through planned play activities and the mediation provided. The processes involved in movement through the ZPD might indicate the ways in which adults mediate learning and development within the pedagogy. Various researchers have attempted to describe movement through the ZPD:

Table 2.2: Descriptions of Learning and Development through the ZPD

| Authors | Principles | Process |
|-------------------------|---|---|
| Wertsch (1984) | Situation Definition - “A situation definition is the way in which a setting or context is represented - that is - defined by those operating in the setting.”(p.8) | The adult and child represent the same task in different ways and approach it differently as a consequence. For example, a young child might construe a problem-solving toy, such as an inset puzzle, as something to explore and experience rather than approaching it systematically. The adult recognises its problem-solving properties and guides the child towards a shared understanding and a systematic approach. Wertsch described this as the child relinquishing their situation definition in favour of the new one. In this way, the child learns new skills and learning proceeds from actual development towards potential development through the ZPD. The child's understanding of their world has changed. |
| | Intersubjectivity - | Wertsch regarded the interaction between the adult’s situation definition and that of the child as a negotiation to achieve a shared understanding and movement through the ZPD. |
| | Semiotic Mediation | Wertsch emphasised the role of language and communication (including gesture) to the negotiation of the intersubjective situation definitions to achieve a shared representation of the task, i.e. a shared understanding of the task characteristics. Wertsch suggested that adults’ use of language to define the situation could inhibit movement through the ZPD as a child might not share the adults’ constructs as yet. |
| Griffin and Cole (1984) | Leading Activity | Griffin and Cole (1984) question accounts of movement through the ZPD that suggest learning is led or directed by adults through scaffolding (Tharp and Gallimore, 1988) or defining the activity (Wertsch, 1984). Instead, they view the child as an active participant and autonomous learner. They introduced the concept of ‘leading activity’. They define this as the activity with the greatest significance for development at a given time. They suggested that this could be determined by the adult or the child. They formulated a sequence of parallelograms of which the top left-hand corner represented the leading activity and the sequences represented the transformations over time. This description could account for pedagogical interactions in which the adult might have pre-conceived ideas about how the play might develop and the child develops the play in a different direction or is apparently unresponsive to the mediation given. |

| | | |
|---------------------------------|---|--|
| Tharp and Gallimore, (1988) | ‘Assisted performance’ defined as: “Assisted performance defines what a child can do with help, with the support of the environment, of others and of the self” (p. 30) | <p>Four Stages:</p> <ol style="list-style-type: none"> I. Performance is assisted by more capable others, described as ‘scaffolding. II. Performance is assisted by self - child carries out the task independently, but not accurately. III. Performance is developed, automatised and ‘fossilised’. IV. De-automisation of performance leads to recursion back through the ZPD: used to describe a continual movement through the stages of the ZPD leading to restructuring and reorganising of cognitive functioning. |
| Hedegaard (1995) | Double Move | <p>Hedegaard (1995) described a ‘double move’ in teaching in which the teacher guides the activity of the child and the child’s responses to the activity guides the teaching given to enable the child to move from concrete experiences to sharing the teachers abstract knowledge in a feedback loop.</p> <p>Fleer (2010) developed this further to describe learning in early years education. She suggested that the interaction between the core (scientific) concepts of the adult and the everyday concepts of the child are situated within particular contexts that are construed differently by the adult and child. Sharing an activity together allows this interaction to develop to support learning as the child's understanding moves towards the scientific and the adult enables a child to redefine this situation. Fleer asserted that this dialectical process supports a child towards next step development, enabling the child to move from everyday understanding towards more complex ideas about objects and situations.</p> |
| Anning and Edwards (1999, 2004) | Joint Involvement Episodes | <ul style="list-style-type: none"> • Intersubjective phase – adult acts ‘as if’ child can do intended action. • Joint Involvement Episode (JIE) – child and adult act together on object and share joint attention. • Independence – child moves forward with some help to carrying out task independently. <p>Scaffolding is regarded as the key process that supports learning.</p> |

The descriptions of movement through the ZPD considered seemed to have common elements in terms of the adult having a more developed understanding of the potential learning opportunities within a given play situation than the child, the adult guiding the child towards these by helping the child to notice what is significant (Anning and Edwards, 1999, 2004), share the same view of the situation (Wertsch, 1984) and recognising the child's understanding of the situation and goals for learning (Griffin and Cole, 1984; Hedegaard, 1995; Fler, 2010). It was suggested these could be features of the pedagogical interactions in the nursery and might be observed in the interactions between adults and children, particularly during shared learning activities.

2.8.5 Criticisms of Vygotsky's Theory

The validity of the interpretation of Vygotsky's theory has been questioned because of the sociocultural context and language in which it was developed. The theory was developed in Soviet Russia and may reflect the sociocultural and political influences at that time (Gillen, 2000; Wood and Attfield, 2005). The incomplete translation of Vygotsky's works might limit interpretation. Daniels (2001) argued that the process of translation involves transformation of meaning as some words, phrases etc. cannot be translated literally. This might have distorted the original theory, as outlined in *Mind and Society*. This cautions against a literal interpretation of Vygotsky's theory.

Gindis (1995) noted that the constructs of mediated learning and social origin of learning proposed by Vygotsky might not recognise the child's autonomy as a learner and there is evidence that children pursue what is relevant to their learning through play. Indeed, this is

encouraged by the Practice Guidance for the EYFS (DfES, 2007). Van Der Veer (2008) advocated further study to clarify and elaborate the concepts introduced and described by Vygotsky. It was felt appropriate, therefore, to consider some of the conceptual frameworks developed from Vygotsky's original theory to inform the research.

2.9 Developments from Vygotsky's Theory: Sociocultural Approach and Cultural Historical Activity Theory

Daniels (2001) stated that the units of analysis within the sociocultural approach are action, activity and context. He suggested that developments from Vygotsky's original theory could be distinguished in terms the unit of analysis, with mediated action emphasised in the sociocultural approach (Wertsch, 1991; Lave and Wenger, 1991, 1999) and activity emphasised in Cultural Historical Activity Theory (CHAT) (Engeström, 1995).

The research considered the conceptual frameworks developed from Vygotsky's (1978) theory in terms of the learning process emphasised: mediation (e.g. Wertsch, 1991), participation in social practice (e.g. Lave and Wenger, 1991, 1999) and activity (Engeström, 1999). It is recognised that these processes are all significant for learning and evident in all the conceptual frameworks considered.

2.9.1 Mediation

Wertsch (1991) introduced the construct of 'mediational means', which he described as the cultural, historical and institutional factors that influence development. He suggested that the unit of analysis for study should be mediated action: actions, individuals carrying out the

actions and the mediational means. Wertsch proposed these should be studied together rather than separately. He highlighted the significance of language as a mediational means to develop conceptual understanding and abstract reasoning. This suggested that the pedagogy could be investigated by studying mediation of learning and development in context and collecting information about the ‘mediational means’, including the language used.

Kozulin (1998) developed the concept of mediation. He likened the ZPD described by Vygotsky to Feuerstein’s (cited) construct of Mediated Learning Experience (MLE). This was described as:

“MLE is a special quality of mediated interaction between the child and environmental stimuli. This quality is achieved by the interposition of an initiated and intentional adult “between” the stimuli of the environment and the child.” (Kozulin, 1998, p. 65).

Kozulin suggested that a MLE is defined by:

- Intentionality/reciprocity – the adult makes the object or activity meaningful to the child and seeks to elicit responses that might indicate development.
- Transcendence - this refers to other learning additional to the immediate experience, including transmission of culture. This could include learning social norms and expectations associated with turn-taking during a counting activity.
- Meaning - the adult makes experiences meaningful to the child, often at an emotional level, distinguishing it from other experiences.

Isman and Tzuriel (2008) distinguished MLE from ZPD in terms of the process of development: MLE allows for the development of new cognitive structures, ZPD involves enhancing or refining existing structures. It is proposed that MLE might provide a conceptual framework that is consistent with current research in neurobiology (e.g. Blakemore and Frith, 2005) and SST, a feature of contemporary early years' pedagogy. It was anticipated that the pedagogy in the nursery would include MLEs: pedagogical interactions between adults and children that support and enable learning and cognitive development, and that these could be studied to investigate the pedagogy at an interpersonal level. This would require identifying the forms of mediation that might be observed. Previous studies have identified the following mediational behaviours:

Table 2.3: MLE and Mediation

| | Klein (2000) | Lidz (2002, 2003) | Isman and Tzuriel (2008) |
|------------------------|--|--|--|
| Mediational Behaviours | Focusing Affecting Encouraging Expanding Regulation of behaviour. Identified that focusing behaviours were used more frequently with special populations. | Intent Meaning Transcendence Task regulation Psychological differentiation Praise/encouragement Change Challenge Joint regard Sharing Contingent responsivity Affective involvement | Intentionality and reciprocity. Mediation of meaning. Mediation of transcendence. Mediation of feelings of competence. Control of behaviour. |

It was proposed that the investigation into the pedagogy should include observations of MLEs between adults and children with and without additional needs, focusing on the mediational

behaviours and the language used (Wertsch, 1991) to promote learning and cognitive development.

2.9.2 Learning through Practices

Sociocultural approaches to learning and development situate learning within the context of cultural practices. Lave and Wenger (1999) described this as ‘legitimate peripheral participation’ (p. 29) and likened the process to an apprenticeship in which learning occurs through access to a community of practices, defined as:

“A community of practice is a set of relations among persons, activity and world, over time and relations with other tangential and overlapping communities.”
(Lave and Wenger, 1999, p. 98).

The child learns how to behave, the language to use and the ways in which to engage with activities. Within this conceptual framework the nursery could be considered as a community of practice.

According to Lave and Wenger, learning occurs as a child moves from legitimate peripheral participation - joining the community at the edges, learning the practices, language, activities, and then moving to full participation. The child learns from participating with others and from others. Artefacts and technologies enable the child to access information, practices and resources so they can become a full member. Language is fundamental and the child has to learn to “talk like others.” This is related to the activities and practices in the setting. In this way, learning can be considered as situated.

The child is regarded as an active participant as well as in an apprenticeship role. The child contributes to the practices and the community of practice. The learning process is regarded as dynamic. Learning arises from transformations as the learner's goals begin to accord with the goals of the community.

This description of learning could apply to learning at many levels within the nursery. It might apply to a child starting in nursery; joining an activity linked to a particular curriculum area; beginning the journey towards participation in formal education and learning about social systems and what is needed to participate or have a role in them. It could also be applied to describe the processes associated with inclusion at these different levels. It suggested a significant role for adults creating opportunities for learning and participation and a broad definition of the pedagogy that includes the practices, culture, artefacts, resources, language and activities that might be observed.

The definition of inclusion used in the research focused on participation in social contexts, communities and interactions mediated by others and the context. It was suggested that Lave and Wenger's (1999) description of learning through practices could be applied to investigate the mediation of inclusion in terms of participation across the setting.

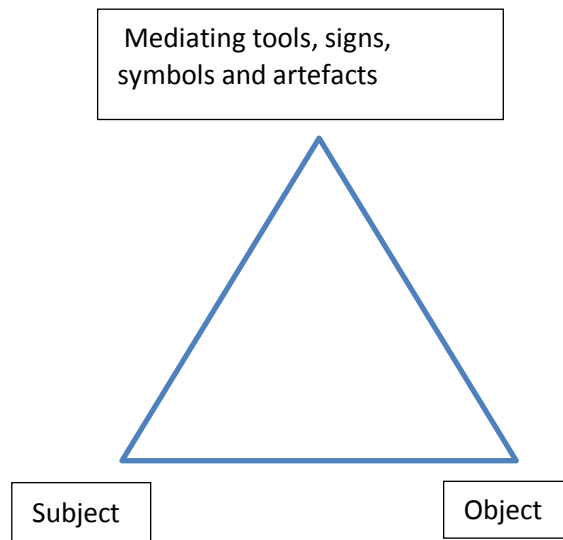
2.9.3 Cultural Historical Activity Theory

Activity theory situates mediation in the context of activity and activity systems. Pedagogy could be regarded as an activity system: it describes individual and collective activity.

Engeström (1999) attempted to model activity theory to include social, cultural and historical

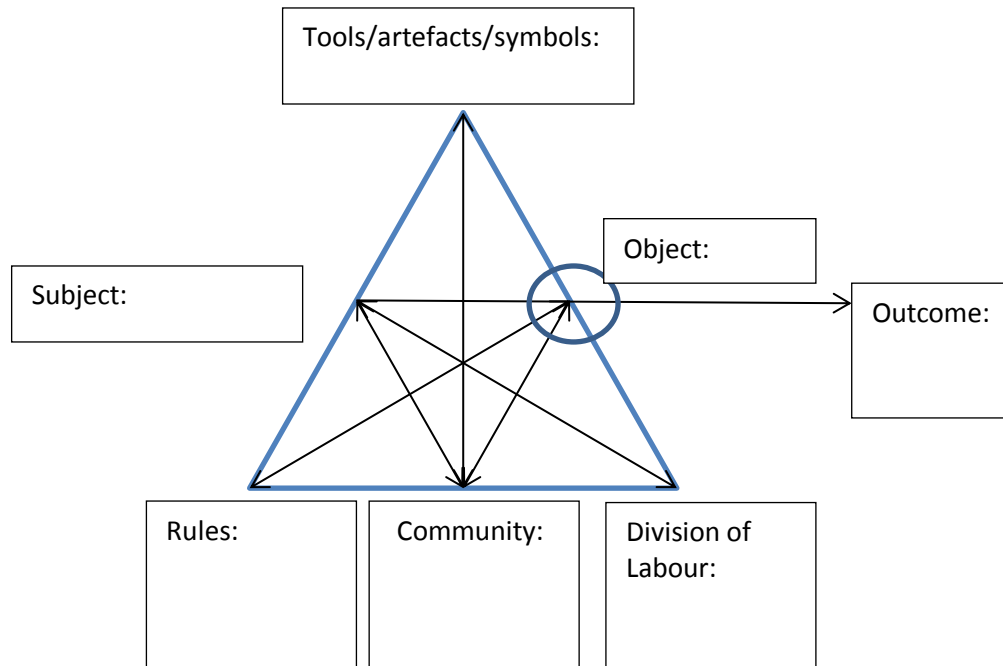
influences and the collaborative nature of action. He proposed a ‘complex model of an activity system’ (p. 30) developed from Vygotsky’s theory.

Diagram 2.3: Vygotsky’s (1978) Original Theory



Vygotsky’s theory introduced the concept of mediation: the subject’s actions on the object are mediated by signs, symbols, tools and artefacts. Engeström (1999) developed this to take account of attributes of the sociocultural historical context that might influence activity: the rules, division of labour and community.

Diagram 2.4: Engeström (1999) Second Generation: Activity System



The oval around the object denotes the dynamic nature of actions relating to the object. These actions could be mediated by artefacts, tools or signs. They might also be mediated by the rules of the social context, the community and its practices and the division of labour. The model attempts to capture the complex interaction between elements in an activity system.

Russell (2002) defined the elements of the activity system as:

Table 2.4: Elements of an Activity System (Russell, 2002)

| Element | Definition |
|--------------------|--|
| Subject(s) | Individuals or subgroup engaged in an activity with low histories and characteristics. |
| Object | Raw material or problem space. |
| Outcome | Maybe anticipated or surprising. |
| Tools | Anything that mediates action. This has a wide definition. |
| Community | Those engaging in the same activity. |
| Division of Labour | Roles of those participating in the activity. |
| Rules | Formal/explicit/tacit/implicit norms, routines, habits and values |

Engeström applied this to learning in terms of an ‘expansive cycle of an activity system’ (p.33). In this process, novices are socialised through participation in the activity. Innovations occur through this process creating contradictions which provide the context for transformation and development. This could describe learning through the ZPD through a process similar to Hedegaard’s (1995) ‘double move’ with division of labour similar to the transfer of responsibility posited by Wertsch (1991).

Engeström suggested the following principles of activity theory:

Table 2.5: Principles of Activity Theory

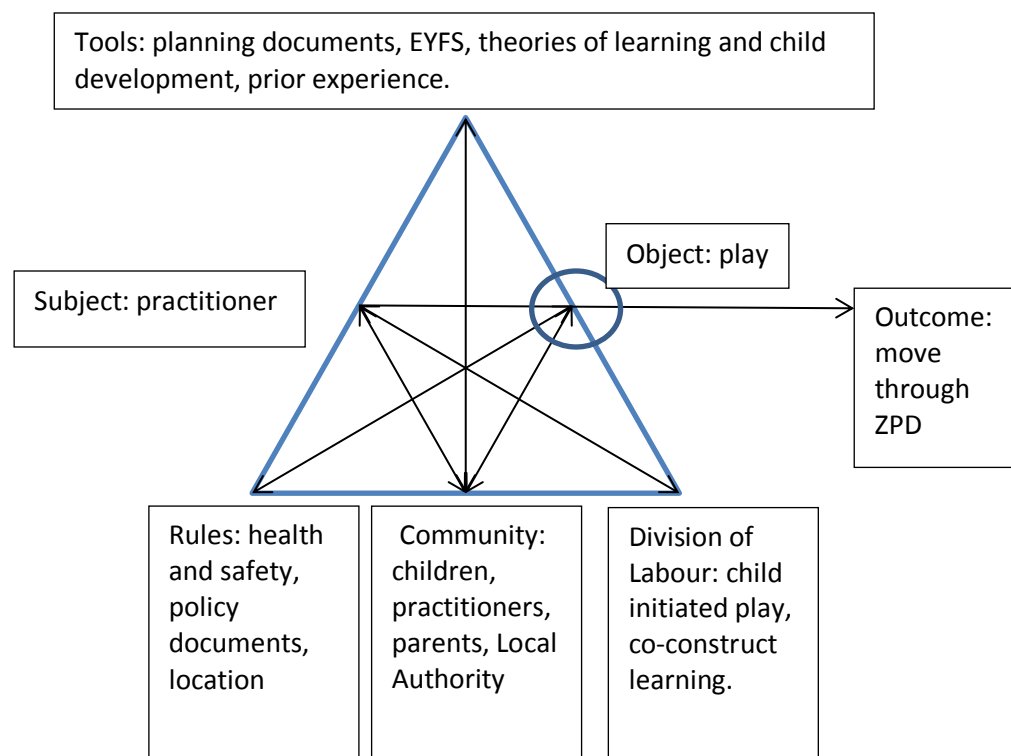
| Principles |
|---|
| <ul style="list-style-type: none"> • The unit of analysis is the activity system within networks of activity systems. Goal directed actions are regarded as subordinate to this. • Activity systems are multi-voiced - this is recognised in terms of the community and division of labour which acknowledges the different histories of participants. • Historicity - activity systems emerge from shared and individual histories. • Contradictions within activity systems and between activity systems lead to changes and development. • ‘Expansive transformations’ describe change over time through collective activity. |

These principles as applied to the pedagogy would regard the pedagogy as an activity system associated with teaching and learning and the actions of teaching might be subordinate to this. It would recognise the different roles and responsibilities of participants in the activity. It would also recognise individual’s prior experiences as relevant: perhaps training and previous experience in education settings for adults and experience of learning situations at home for the children. Contradictions might arise when adults attempt to shape or develop children’s play to support learning. Contradictions might also occur at a systems level relating to new

policies or management interventions. Change and development would therefore occur at many levels simultaneously in a dynamic process.

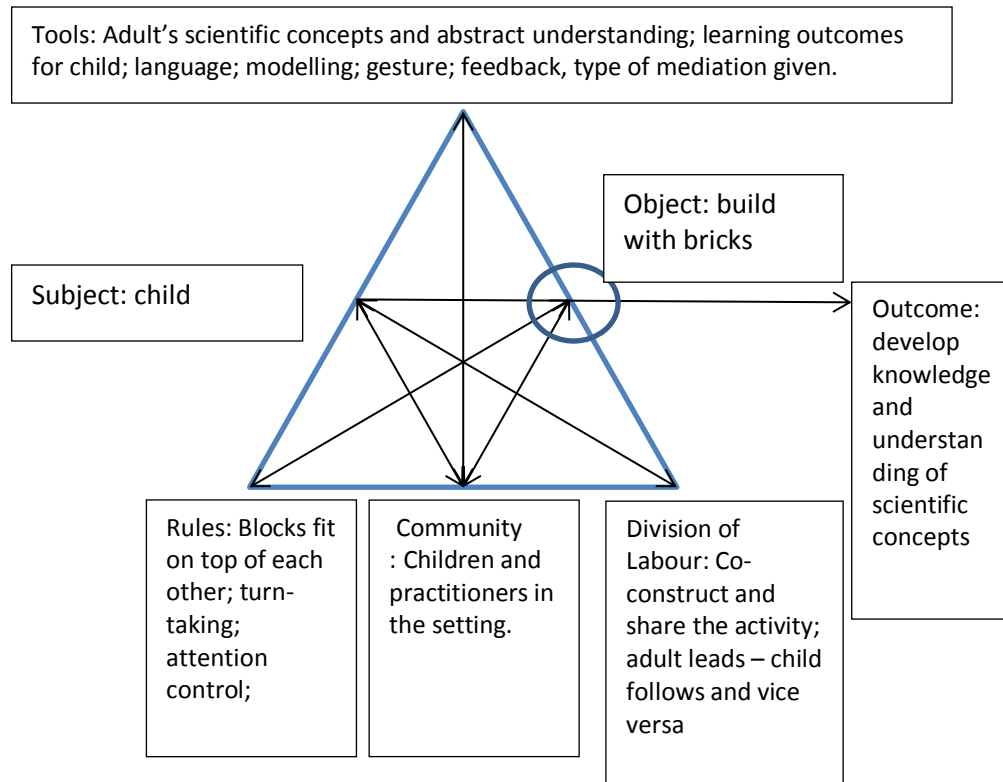
Daniels (2010) emphasised the historical element of activity theory and described it as Cultural Historical Activity Theory (CHAT) to highlight that activity is situated in time and that the theory is linked to Vygotsky's original theory. It was proposed that CHAT could be applied to understand and explore the pedagogy as an activity system in terms of the ways in which practitioners mediate children's learning and cognitive development using their knowledge and understanding of child development and theories of education. This could be represented as:

Diagram 2.5: Pedagogy as an Activity System



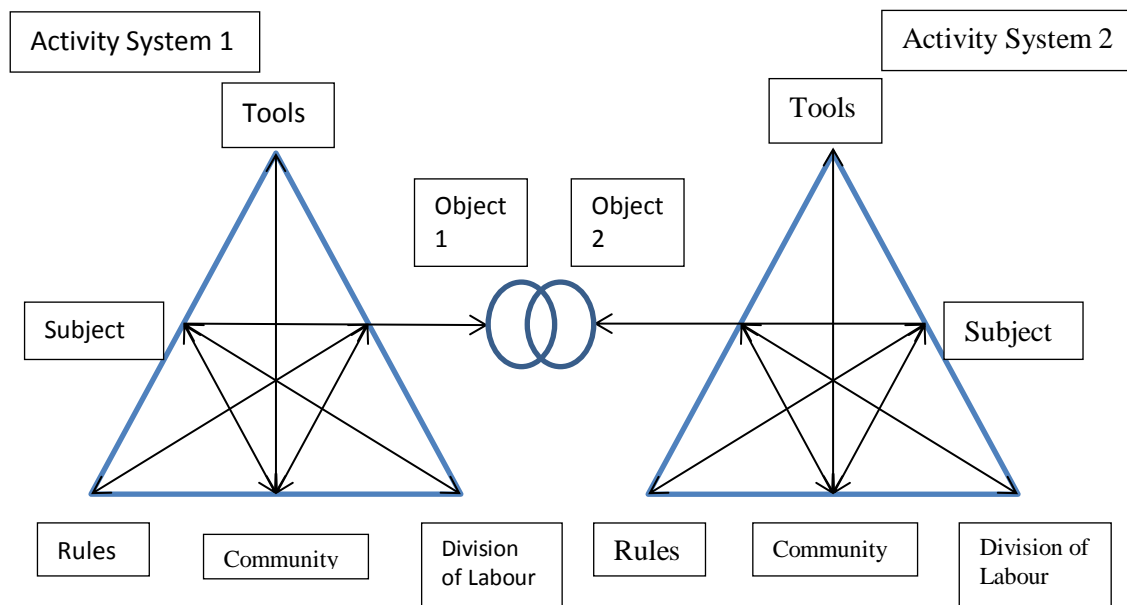
It could also be applied at the interpersonal level to operationalise a MLE and to explore the mediational means. This could be represented as:

Diagram 2.6: Activity System for Practitioner's Mediation of Play



The Third Generation of Activity System suggested how two activity systems might interact together to bring about transformations in the pedagogy, practices and learning activities for children.

Diagram 2.7: Engeström (1999) Third Generation: Cultural Historical Activity Theory



The Third Generation diagram could be used to represent a learning situation/activity in the ZPD in which the adult and child define the activity differently, and/or define the rules or division of labour differently. This creates contradictions that become resolved as they co-construct the activity. For young children, it is possible that they are resolved through the mediation of actions that help to transform their interpretation of the activity.

Kapor (2008, cited by Flear, 2010) suggested that activity theory might not fully capture the complex psychological processes involved in child development. It might be appropriate to consider Cultural Historical Activity Theory alongside other conceptual frameworks discussed in order to investigate the pedagogy holistically.

2.10 Rogoff's (1990, 1995) Three Planes of Analysis

The conceptual frameworks considered suggested the pedagogy in the nursery could be studied by applying MLE to explore the mediation of learning through pedagogical interactions, Lave and Wenger's (1999) description of participation in social practices to investigate inclusion and CHAT (Engeström, 1999) to explore pedagogy as an activity system situated in the sociocultural historical context of the nursery. These might provide disparate descriptions of the pedagogy, rather than a coherent explanation of how the pedagogy might mediate cognitive development and inclusion across the setting. It was proposed that Rogoff's Three Planes of Analysis might offer a unifying conceptual framework to investigate the pedagogy at three levels by exploring the processes that support learning and inclusion at each level using the conceptual frameworks described.

Rogoff (1995, 2003) asserted that child development is complex and should be studied in context, recognising the interrelated nature of development and social, cultural and historical factors, rather than studying discrete areas of development. She highlighted the interactive nature of development and the interrelationship between the role of the adult and the child within the ZPD. She suggested that development could be observed on three interrelated planes:

- Apprenticeship corresponding to Community Processes;
- Guided participation corresponding to Interpersonal;
- Participatory appropriation corresponding to Personal.

These planes were regarded as coexisting and development as occurring across and between these planes at the same time.

Rogoff suggested that the three planes could provide a focus for analysis, with the ‘activity’ or ‘event’ as the unit of analysis. She proposed that planes could be foregrounded and considered separately, however, others would always be in the background. This was explained as:

“..similarly, we may consider a single person thinking or the functioning of the whole community in the foreground without assuming they are separate elements.” (Rogoff, 1995, p. 140).

Applying this framework might allow different aspects of the pedagogy to be studied at different levels or ‘planes’ in order to focus the investigation. Rogoff described this as focusing lenses on different planes so that the processes could be studied. She suggested that although it was difficult to operationalise the processes and activities within each plane, the following characteristics might be associated with each one:

Table 2.6: Characteristics of Planes (From Rogoff, 1995)

| Concept | Description | Plane | Characteristics |
|-----------------------------|--|---------------|--|
| Apprenticeship | Individuals participating in socially and culturally organised activities that support development | Community | Activities , practices, organisation, purposes, resources, means, cultural tools, values |
| Guided Participation | Involves learning with and from others in a process similar to the construct of the MLE | Interpersonal | Direct interaction, roles and structures, cultural activities, communication, collaboration, routines, goals |
| Participatory Appropriation | Process of change arising from participation in the wider sociocultural activity | Personal | Participation, roles, change over time, transformation, dynamic, |

Rogoff (1995) suggested that:

“The approach emphasises seeking patterns in the organisation of social, cultural activities focusing variously on personal, interpersonal or community aspects of the activities with other aspects in the background but taken into account.”
(Rogoff, 1995, p. 161).

For the purposes of the research, it was suggested that the conceptual frameworks discussed could be applied to describe the processes within each level:

Table 2.7: Conceptual Frameworks applied at each Plane

| Concept: | Plane: | Focus: | Conceptual Framework |
|-----------------------------|---------------|-----------------------|---|
| Apprenticeship | Community | Pedagogy | CHAT (Engeström, 1999) |
| Guided Participation | Interpersonal | Cognitive development | MLE (Kozulin, 1998) & descriptions of movement through the ZPD CHAT (to contextualise MLE) |
| Participatory Appropriation | Individual | Inclusion | Legitimate Peripheral Participation (Lave and Wenger, 1999) |

Fleer (2002, 2003) demonstrated how Rogoff's Three Planes of Analysis could be applied to assessment practices in early years education (Fleer, 2002) and to analyse data from a small scale study into the views of indigenous people of their own and their pre-school child's early childhood experiences (Fleer, 2003). She showed lenses corresponding to each plane with the lens at the personal plane focusing on the individual child, the lens at the interpersonal plane focusing on the interaction between the adult, the child and other children within the social context featured, and the lens at the community or institutional plane focusing on the whole culture or institutional context, including discourses, behaviour, ways of learning and the symbolic artefacts. She asserted that the approach allowed the interaction between children, adults and the sociocultural context to be studied in relation to learning.

She concluded that:

“Rogoff (1998) has provided a powerful tool for analysing the sociocultural activity that takes place in a range of contexts.” (Fleer, 2003, p. 58).

A similar approach was adopted in the research, focusing lenses corresponding to three planes: community, interpersonal and personal to collect and interpret data about the pedagogy in terms of the actions, activities, interactions, social practises, roles and routines in the nursery and the ways these might mediate cognitive development and inclusion, using conceptual frameworks that describe this as MLE, CHAT and participation in social practices.

2.11 Conclusion

The research adopted a sociocultural approach to define pedagogy and inclusion with reference to conceptual frameworks developed from Vygotsky's (1978) theory. A significant principle of this theory is that learning occurs through interaction with others and in sociocultural contexts. This principle was endorsed by recent government commissioned research (e.g. EPPE) and subsequent policy development (e.g. EYFS), suggesting that it is significant to contemporary policy and practice in early years education.

For the purposes of the research, pedagogy was regarded as situated within the interactions, actions, activities, social practices, roles and routines within a dynamic activity system and as realised within the pedagogical interactions between practitioners and children. Inclusion was regarded as participation in the social practices created by the pedagogy and influenced by the context, communities, interactions and mediation available. The pedagogy was regarded as mediating children's learning and cognitive development and inclusion in terms of their participation within the setting.

It was suggested that the complex social processes and systems associated with pedagogy in early years settings could be investigated by applying lenses corresponding to Rogoff's (1990, 1995) Three Planes of Analysis to explore practices and processes at the community, interpersonal and personal level to inform a holistic description of pedagogy as the mediator of cognitive development and inclusion. The description of processes and characteristics within each plane seemed consistent with the conceptual frameworks considered focusing on learning through mediation, participation in social practices and communities of learners and

activity systems (Engeström, 1999). Data collection and analysis at each level was informed by these conceptual frameworks to investigate the ways in which the pedagogy mediated learning and cognitive development and inclusion as participation across the setting.

It was proposed that the role, values, actions and activities of practitioners in the setting would be crucial to understanding the pedagogy and therefore views about learning and inclusion were sought.

It was hoped that a rich description of the pedagogy and mediation of learning, cognitive development and inclusion would emerge. This could illuminate features of inclusive practice in the nursery and ways in which adults support young children's learning through their pedagogical interactions that take account of individual needs, including those of children with severe and complex additional needs. It might also provide a useful framework that EPs could apply within their practice in early years to investigate the pedagogy and factors associated with it that might promote learning and inclusion.

CHAPTER 3

RESEARCH DESIGN

3.1 Introduction

This section will provide an overview of the epistemological and ontological assumptions that informed the study and the implications for the research methodology chosen. It will describe the methodology and methods selected and provide a rationale for this based on evidence from the literature. It will describe the research design and methods for data collection and analysis.

3.2 Research in Educational Psychology Practice

Educational Psychologists (EPs) research issues and observations that emerge from everyday practice. The research aimed to reflect and contribute to EP practice in the early years. The context for the research was a local maintained nursery with provision for children with severe and complex additional needs (AN). The researcher was link EP to the setting and was involved in contributing to the identification and assessment of children's SEN, including Statutory Assessment. The researcher also contributed to development of policy and practice at systems level, facilitating a reflective process to develop inclusive practices across the nursery.

Research in EP practice can be problematic and there are limitations as a consequence of the competing demands of the professional role and limited opportunities to conduct research

consistent with academic training and study (Norwich, 1998). The discipline of psychology traditionally takes a positivist stance: scientific methods are used to study human behaviour. Experimental studies, typically Randomised Controlled Trials (RCTs), are regarded as contributing to a secure evidence base to inform practice (Frederickson, 2002). However, EPs as applied psychologists are aware of the limitations and frustrations of applying scientific theories and findings arrived at in controlled conditions to the complex social contexts of everyday practice in schools and settings. More recent developments in EP research have highlighted the value of the interpretivist paradigm and qualitative data collection in research in practice:

“The interpretivist paradigm represents an interest in how meaning is made, focusing on perspectives and personal and social meanings. It is therefore most suited to inquiry in everyday and complex practice settings where objectifying what is going on is possible.” (Norwich, 1998, p. 13).

EP practice is embedded in social and cultural contexts at different levels: the child in the context of their social group, class, family and school is subject to influences at many levels and a complex interaction of factors might affect their learning and development. EP practice is social practice: it is about interacting with people and the contexts they are in. This makes it difficult to apply theories and models developed from academic research using scientific methodology that control the complex variables observed in real-life situations.

This creates a dilemma for research in EP practice between contributing to a highly regarded evidence base and reflecting social situations observed in everyday practice that might produce more relevant findings. It was therefore important to critically consider the methodological assumptions of the research.

3.3 Ontological and Epistemological Issues

Methodology in research is informed by assumptions about ontology: the nature of reality and what exists; and epistemology: how we know (Searle, 1999)

Cohen, et al. (2000) described two competing views of reality: nominalism and realism.

Realism assumes that reality is external to humans, something that individuals react to, and that reactions and behaviour can be studied objectively using scientific methods. Nominalism assumes that reality is constructed by the individual as they attempt to derive meaning from and understand their experiences. It is therefore subjective and informed by the individual's prior experiences in social and cultural contexts (e.g. family, school, society etc.).

Cohen et al suggested that the view of reality adopted informs how knowledge about the world is derived. Realism assumes that knowledge is derived from observations of causal relationships between factors that can be expressed as universal laws. These universal laws can be used to describe and understand the world and human experience. This is regarded as a positivist position. Realism involves the use of scientific methods for data collection (e.g. laboratory studies, RCTs, experiments) to derive knowledge.

Conversely, nominalism posits that knowledge is constructed or co-constructed from actions, activities and interactions and is situated in human experience in different social and cultural contexts. Knowledge is therefore subjective, cumulative and dynamic in that knowledge structures might adapt to new information and situations. This methodological approach is described as interpretive or qualitative in the literature (Cohen, et al., 2000; Robson, 2002).

Cohen, et al., (2000) provided an overview of the different methodologies:

Table 3.1: Methodology (adapted from Cohen, et al., 2000)

| | Subjective | Objective |
|---------------------|--|---|
| Ontology | Nominalism No objective reality | Realism Empirical study of reality |
| Epistemology | Interpretivism Study in context; individual meaning making. | Positivism Studied using scientific methods. |
| Human nature | Voluntary Free-will | Deterministic Every event has a cause: causal relationships |
| Methodology | Ideographic Individual, unique | Nomothetic Universal, general. |
| Methods | Constructivism Phenomenology Ethnomethodology | Scientific method Theory driven. Hypothesis about causal relationships and universal laws. Data collection to confirm/disprove. Findings generalised as universal laws. |

This informs two positions:

Table 3.2: Research Position (adapted from Cohen, et al., 2000)

| | Interpretive | Normative |
|--|---|--|
| Guiding Ideas | Focus on the individual | Human behaviour is rule-governed. |
| Observable Behaviour | Actions regarded as meaningful behaviour in the context of specific environments | Viewed as responding to stimuli in the environment |
| Derivation of theory | Emergent 'grounded' in data | General Universal laws Theory driven research (May, 1997) |
| Methodology | Anti-positivist | Scientific/positivist |
| Data | Qualitative: views and meaning making of individuals situated in sociocultural contexts | Quantitative: numerical |
| Level of data collection/analysis | Micro – findings apply to individual case/situation | Macro – findings are generalised as universal laws |

Psychology as a discipline traditionally developed within the normative position, using positivist methodology to produce theories and models that explain human behaviour and phenomena based on experimental data. In this paradigm, the researcher assumes an expert role (Scott and Usher, 1999), a position of knowledge and power and is able to manipulate factors and contexts in order to produce data that demonstrates theory/hypotheses and explains observable behaviour (e.g. memory span). In practice, the human behaviour studied often arises in complex situations (e.g. memory for instructions given in a classroom). Such theories and models fail to take account of the social and cultural factors that might influence behaviour and, indeed, are subject to political influence. For example, changes in political climate could influence the direction of research away from promoting and supporting inclusion to advocating segregation.

Searle (1999) identified four challenges to realism and therefore the normative tradition:

Table 3.3: Challenges to Realism (Searle, 1999)

| | |
|-------------------------------------|---|
| Perspectivism | The world cannot be viewed without bias; bias cannot be removed from research. The values of the researcher inform actions. |
| Conceptual reality | Conceptual schema developed from experience in sociocultural contexts frames reality. How we perceive reality is informed by prior experience. |
| History of science | Science as a discipline is constantly evolving and advancing. Theories and findings at a given point in time might create a reality rather than objectively reflect it. New findings challenge how we view reality therefore reality changes. |
| Undeterminant of theory by evidence | New findings challenge existing theory and knowledge. View on reality changes rather than reality itself changing. |

Robson (2002) highlighted difficulties with demonstrating causal relationships between phenomena in the social world and questions the validity of the traditional scientific approach as applied to social sciences. Sikes and Goodson (2003) suggested that research is an iterative process and highlight the importance of reflexivity. The researcher is a social being with their own historical, social and cultural influences.

Anecdotal evidence from EP practice suggested that universal laws, theories and models in psychology derived from scientific study might not apply in all cases. Phenomena observed in EP practice cannot be explained in simple terms. Relationships between factors that might influence children's learning and development seem to be complex and situated in specific sociocultural contexts that children participate in. There are also ethical issues with setting up scientific investigations into teaching and learning in which teaching is manipulated to establish causal relationships between practice and educational outcome.

Accepting the interpretivist paradigm involves data collection techniques that provide qualitative data: views, opinions and constructs of the individuals participating in the setting. This could include practitioners and children, as well as the wider community. The age and needs of the children attending the setting might preclude their involvement and their experiences might not be reflected in the dataset. This could limit the investigation into the pedagogy. It was therefore felt appropriate to investigate their experiences in other ways, for example, observations in the context.

Robson (2002) suggested that rather than viewing research design as either within a normative or interpretivist methodology, research in social sciences should be considered as ‘Fixed Design’ or ‘Flexible Design’, according to the individual researcher’s approach or the purpose of the research. Adopting a Fixed Design suggests the researcher has clear ideas about the purpose and intended outcome of the research and is perhaps outcome-focused, whilst a Flexible Design is appropriate when research is regarded as an iterative process necessitating cycles of action and reflection (Heron and Reason, 2001) in order to investigate phenomena.

Table 3.4: Fixed and Flexible Designs (Robson, 2002)

| | Fixed Design | Flexible Design |
|-------------|--|--|
| Methodology | Positivist | Interpretive |
| Method | Natural science Hypothetico-deductive | Ethnographic Descriptive |
| Type: | Quantitative | Qualitative |
| Process: | Collect data then analyse | Data collection and analysis process intertwined. |

Robson (2002) suggested that the purpose of the research in terms of the role of theory and values will influence the design chosen. He suggested that whilst the researcher might

employ a flexible design, some attributes of the scientific method should be retained: being systematic, sceptical and ethical in research activities.

Flexible Design includes: post-positivism, constructivism and emancipatory research. In post-positivism, the researcher achieves objectivity by recognising their influence on the research. For example, in critical realism and emancipatory research, the researcher attempts to redress the power imbalance of researcher in the expert role.

In constructivism, reality is viewed as socially constructed, and the researcher attempts to understand the multiplicity of social construction of meaning and knowledge in a given situation. Actions and activities are viewed as socially, culturally and historically situated and understood in terms of the meaningfulness to the individual. Language is viewed as the tool for eliciting meaning. Reality is co-constructed by researchers and participants. Robson suggested that methods such as observation and interviews can be used to capture multiple perspectives on the same situation.

Gergen (1999) described social constructionism as focusing on the interaction between systems and sociocultural factors situated in particular contexts. He emphasised the role of language as a tool for constructing our world and experiences and suggested this should be the focus for research.

The research was informed by conceptual frameworks developed within a sociocultural approach that situates learning within social interactions and sociocultural contexts and is consistent with constructivism. It adopted a flexible design, informed by interpretivist

methodology, to provide a description of the pedagogy as observed and as co-constructed by adults participating within the setting through their views, actions, interactions, social practices and activities.

3.4 Aims of the Research

With reference to Robson's (2002) guidance on developing research ideas, the purpose of the enquiry was exploratory: to investigate the pedagogy in the nursery, to gain insight into how this might mediate cognitive development and inclusion and to investigate the actions and activities involved in mediation (Meditational Means, Wertsch, 1991). The enquiry sought to 'assess phenomena in new light' (Robson, 2002) by applying conceptual frameworks developed from Vygotsky's (1978) sociocultural theory in order to investigate the pedagogy. It was anticipated this might generate ideas about the links between pedagogy and inclusion and further contribute to the body of evidence about sociocultural frameworks applied in research. It might indicate how EPs could use these frameworks in their practice to support practitioners to further develop pedagogy that promotes the cognitive development of all children in their care and to inform assessment practice. In addition, the findings could have implications for involvement of EPs in early identification and interventions in the early years.

3.5 Previous Research

Previous research into pedagogy in the early years has included Government commissioned research: the EPPE project (Sylva, et al., 2004). Within this project, smaller studies were

conducted including REPEY (Siraj-Blatchford, et al., 2002). These studies included positivist approaches to collect data relating to the characteristics of the pedagogy in 'good' versus 'adequate' early years settings. Data collection tools included rating scales and structured observations (time sampling and event sampling). Statistical analysis was performed to identify the factors associated with each setting and any similarities and differences (comparative study). The study identified correlations between the factors and outcome measures including attainment on National Curriculum levels and scores on assessments of cognitive abilities.

The purpose of the research was to identify factors associated with pedagogy in effective settings to inform policy and practice. It was appropriate, therefore, to select methods and methodologies that might produce universal laws and generalizable results, however, these approaches are less sensitive to contextual factors. Siraj-Blatchford et al (2002) reported a statistically significant difference between the data relating to different settings, however, further examination suggests that overall the settings are similar in terms of the balance of activities and the interactions. This might indicate that the pedagogy is more similar and other differences, such as the qualifications of practitioners, might be responsible for the results obtained.

The study predominantly focused on attributes of the curriculum rather than pedagogy: what was delivered rather than how it was delivered. This might have neglected the subtleties of the interactions between participants in the setting (adults and children) that might support learning and development overall and might be construed as indicative of the pedagogy.

Küçüker, et al.'s (2000) inquiry into teachers' perceptions about factors that could be barriers and support inclusion in pre-school used psychometric measures. They identified statements from a literature search and asked teacher to rate them in order to develop a psychometric tool. The statements did not seem to explore contextual factors in detail. They did not seem to take into account individual differences in the children's needs or the teachers' views, both factors have been identified as relevant in the literature (Odom, et al., 2004; Gibbs, 2007; Evans and Lunt, 2002). The data collected seemed to provide an indication of 'what' might be happening, rather than the underlying processes that might enable or prevent inclusion.

Varga (2003) conducted a case study into the pedagogical practice in an inclusive early years setting. She made naturalistic observations and used a grounded theory approach to analyse the data, applying Vygotsky's (cited) concept of collective relationship. She presented vignettes and subjective interpretations that described the interactions and how collective they were. She implied that the collective nature of interactions might be indicative of inclusion; however, little research evidence was presented to support this. Varga concluded there were minimal collective interactions between teachers and children that might create Zones of Proximal Development (ZPD) for learning.

Varga did not describe in detail contextual factors that might have influenced the interactions observed. She tended to offer negative evaluations of the interactions, rather than considering how these might mediate other areas of development. She did not include the views of practitioners to explore factors that might have affected their approaches. Whilst Varga referred to Vygotsky's theory to analyse the data, she did not specify the theories that informed her analysis of the play observed. It is suggested that in the research conducted,

applying conceptual frameworks developed from Vygotsky's theory to explore mediation of learning and contextual factors might facilitate a more systematic analysis of the data leading to more robust findings.

Theorodou and Nind (2010) conducted an ethnographic case study focusing on the role of teachers in their interactions to support the inclusion of two children with Autism. Their data collection methods were informed by a sociocultural approach and previous research on inclusion. They used observations and included semi-structured interviews with teachers and parents. A thematic analysis of the data identified three roles for the teacher: supporter, mediator and active play partner, illustrated by vignettes. The study seemed to focus on social inclusion and did not necessarily consider how the teachers' approaches might mediate inclusion in terms of participation across the setting, a focus for this research.

This research applied a sociocultural approach to inform data collection and analysis. Flynn (2005) suggested that the sociocultural approach might be useful to explore pedagogy:

“The sociocultural framework therefore provides a theoretical framework and methodological tools to potentially make effective bridges between teaching and learning.” (Flynn, 2005, p.41).

Previous studies into pedagogical interactions and mediational behaviours that attempted to operationalise the sociocultural approach have created contrived situations rather than studying interactions between adults and children that guide their learning in everyday situations (e.g. Rogoff, et al., 1995; Wertsch, et al., 1999; Klein, 2000; Coltman, et al., 2002). They used positivist methods to collect data. The methods employed did not seem consistent with the sociocultural approach that informed the research, and the interactions observed

might not be representative of the ways in which adults in the studies typically guide learning in everyday situations. Rogoff, et al. (1995) suggested that:

“A sociocultural approach demands closer attention to the on-going dynamic development of social interaction and of problem solving by people participating in sociocultural activity – whether the activity is a teaching/learning situation in school or in learning a trade, or whether the activity is demonstrating knowledge on demand for a researcher in a laboratory post-test.” (Rogoff, et al., 1995, p. 144).

Daniels (2008) suggested there could be inherent methodological issues within the sociocultural approach, particularly in terms of the operationalisation of theories. This issue prompted the current study: to investigate whether the highly theoretical processes conceptualised could be observed in practice. Daniels proposed it might prove difficult to distinguish different elements and approaches in practice. It is the complexity of the interaction between different elements and contextual factors that is felt to form the basis of individual development (Rogoff, 1990, 1995); therefore, it was felt appropriate to use conceptual frameworks that attempt to represent this complexity, rather than simplifying it into a few elements.

3.6 Research Design

The research was an exploration of the pedagogy rather than an evaluation of the quality of the provision or interactions that might support learning and inclusion. It could be regarded as a case study of the pedagogy in a particular educational setting. Robson (2002) suggested a broad definition for case study: it could refer to a study of a situation, individual, group or

organisation. The research focused on an aspect of an organisation: the pedagogy in the nursery.

3.7 Case Study

Yin (2009) asserted that case studies contribute to knowledge about an individual, group, organisation, social, political and/or related phenomena. Yin (2009) defined case study as:

- “1. A case study is an empirical inquiry that
- investigates a contemporary phenomenon in depth within its real-life context, especially when
 - the boundaries between phenomenon and context are not clearly evident.”
- (...)
- “2. The case study inquiry
- copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result
 - relies on multiple sources of evidence, with data needing to converge in triangulating fashion, and as another result
 - benefits from the prior development of theoretical propositions to guide data collection and analysis.” (Yin, 2009, p.18)

Yin (2009) suggested that the case study method is appropriate when a phenomenon is studied in context and the context is also studied: events are studied as they happen and are not controlled or manipulated by the researcher. It was felt this was consistent with the aims of the research: to study the pedagogy in the nursery situated in time and place, and that the nature of the provision and the inclusive practice made it a unique case.

Yin (2009) described four types of case study design. From these descriptions, it was suggested that the research was a single case study/embedded.

Table 3.5: Type of Case Study

| | |
|-------------------|--|
| Single case study | The nursery, its practice and pedagogy could be regarded as a ‘unique’ case due to the provision available. |
| Embedded | All case studies include analysis of contextual conditions (Yin, 2009), the study considered factors that contributed to the pedagogy, however it is recognised that due to limitations and time constraints, this was not exhaustive. |

3.7.1 Case Study Method

Yin (2009) described five components of case studies:

1. Research questions
2. Propositions
3. Unit of analysis
4. Link data to propositions
5. Criteria for interpreting data.

These will be considered in relation to the research.

1. Research Questions

Yin suggested these are generally framed as ‘how’ and ‘why’ questions. The following questions guided the research:

Table 3.6: Research Questions

| Key Research Questions | Sub-Questions |
|---|--|
| How can sociocultural conceptual frameworks and constructs developed from Vygotsky's (1978) theory be applied to investigate the pedagogy in the nursery? | What conceptual frameworks might be useful? How can Rogoff's (1995) Three Planes of Analysis be applied? What do these conceptual frameworks suggest about the pedagogy? |
| How might the pedagogy mediate learning and cognitive development? | How is cognitive development for all children promoted? How are activities differentiated? |
| How might the pedagogy mediate inclusion in terms of participation of all children across the setting? | What activities are available for all children? What activities promote inclusion? What activities do children choose to participate in? What activities do children participate in together (children with and without AN)? How do routines promote inclusion? |
| How might practitioners mediate children's learning and cognitive development and their inclusion, in terms of their participation? | How is movement through the ZPD mediated during MLE between adults and children with and without AN? What forms of mediation do adults use in their pedagogical interactions with children with and without AN to promote cognitive development? What is the adult role in promoting participation? What is the adult role in promoting cognitive development? How might constructs about learning and inclusion inform mediation? |
| How might practitioners' constructs about young children's learning and development inform the pedagogy in terms of the mediation of cognitive development and inclusion? | What constructs do practitioners have about the learning and development and inclusion of children with and without AN? How do these constructs inform the pedagogy? How do these constructs inform inclusion? How do constructs about learning and development inform these for children with and without AN? Are there differences and similarities in these constructs? |

The ‘sub-questions’ were informed by Rogoff’s (1995) Three Planes of Analysis:

Table 3.7: Sub-questions related to Rogoff’s (1995) Three Planes of Analysis

| Plane | Process | Characteristics | Operationalisation | Sub-Questions |
|-----------------------------|---------------------|---|---|---|
| Apprenticeship | Community processes | Activities , practices, organisation, purposes, resources, means, cultural tools | Activities in nursery, planning, adult role, purposes of activities with respect to cognitive development, displays, routines, groups | How are activities differentiated? What is the adult role in promoting participation? What is the adult role in promoting cognitive development? |
| Guided Participation | Interpersonal | Direct interaction, roles and structures, cultural activities, communication, routines, goals | MLE, adult role, mediation, tools and artefacts, constructs, interactions in routines | What constructs do practitioners have about the learning and development of children with and without AN? How do constructs about learning and development inform the pedagogy? What forms of mediation do adults use in their interactions with children with and without additional needs to promote cognitive development? How do routines promote inclusion? |
| Participatory Appropriation | Personal | Participation, roles, change over time, transformation | Participation in different activities, groups, induction, movement through ZPD | What activities are available for all children? What activities promote inclusion? What activities do children choose to participate in? What activities do children participate in together (children with and without AN)? How is movement through the ZPD mediated during MLE between adults and children with and without additional needs? How do constructs about learning and development inform mediation for children with and without AN? Are there differences and similarities in these constructs? |

2. Propositions

Yin suggested this could include descriptive theory. Rogoff's (1995) Three Planes of Analysis were applied to inform data collection at three levels and conceptual frameworks developed within the sociocultural approach informed the investigation of mediation of learning and inclusion within each level:

Table 3.8: Propositions applied to the Research

| Level | Focus | Conceptual Framework |
|---------------|-----------------------|---|
| Community | Pedagogy | Cultural Historical Activity Theory (CHAT) (Engeström, 1999) |
| Interpersonal | Cognitive Development | Mediated Learning Experience (MLE) (Kozulin, 1998) CHAT |
| Individual | Inclusion | Legitimate Peripheral Participation (Lave and Wenger, 1991, 1999) |

3. Unit of Analysis

The study used more than one unit of analysis: the pedagogy, cognitive development and inclusion, consistent with an 'embedded single case design' (Yin, 2009). Data was collected from multiple sources using interviews with practitioners and direct observation of practice and participation of identified children to create a 'rich picture' of the pedagogy within a given time frame. This situated the pedagogy in a particular time and place.

Daniels (2010) stated that the units of analysis in the sociocultural approach are actions, activity and context. The pedagogy was regarded as the context and the actions and activities were as described by practitioners and observed in practice. Daniels (2008, 2010) advised that the interaction between different elements could militate against specifying units of analysis, suggesting they might change as the research proceeded.

Sawyer (2002) (cited by Daniels, 2010) cautioned that whilst sociocultural theories refer to individuals, contexts and processes as separate entities, in real-life situations these are intertwined and interact in complex ways. Sawyer suggested that individuals remain autonomous as they participate in social groups. For this reason, the views of practitioners were sought to explore their constructs about cognitive development and inclusion, as well as observing practice.

Daniels (2008) suggested that the degree of separation between individuals and contexts should be considered carefully when operationalising sociocultural theories in order to develop compatible research methodologies and methods. As a consequence, data was collected about the context and actions of individual's participating in it.

4. Anticipate Links between Data and Propositions

Yin (2009) advocated collecting data from a range of sources. He identified six sources of evidence and outlined the strengths and weaknesses of each one (p. 102).

3.9: Six Sources of Evidence (Yin, 2006)

| Sources of Evidence: |
|--|
| <ol style="list-style-type: none">1. Documentation2. Archival records3. Interviews4. Direct observation5. Participant observation6. Physical artefacts. |

The research collected data from interviews with practitioners and observations of practice, including pedagogical interactions between practitioners and identified children with and without AN, described as MLEs, and observation of individual children with and without AN participating in typical sessions. The data collected corresponded to the three planes identified by Rogoff (1995): community, interpersonal and personal.

Table 3.10: Methods of Data Collection at each Plane

| Level | Focus | Conceptual Framework | Data Collection Method |
|---------------|-----------------------|---|--|
| Community | Pedagogy | CHAT | Interviews with practitioners working with children without additional needs and practitioners working with children with severe and complex additional needs. |
| Interpersonal | Cognitive Development | MLE CHAT | Observations of MLEs between practitioners and children, some of whom have severe and complex additional needs. |
| Personal | Inclusion | Legitimate Peripheral Participation | Following two children: one with severe and complex additional needs and one without identified additional needs. |

Yin's three principles of data collection were followed:

Table 3.11: Principles of Data Collection applied to the Research

| Principle of Data Collection | Research Activity |
|---|--|
| Use multiple sources to ensure triangulation, establish 'converging lines of inquiry' (p. 115) and to address threats to construct validity | Data was collected from different sources corresponding to the three planes. The intention was to create a rich description of the pedagogy and allow triangulation of the evidence from different sources to identify themes/patterns in the data that might illuminate the processes observed. |
| Data base | Data was transcribed, stored and analysed to create a secure database, whilst respecting confidentiality. |
| Chain of evidence | It is hoped that the methodology and method, as described, will provide a logical, coherent account and that the data analysis, as described, is also coherent and logical. |

5. Criteria for Interpreting Findings with Reference to Research Questions.

Yin identified four general strategies that were applied to the research:

Table 3.12: Strategies for Interpreting findings Applied to the Research

| Strategy: | Research Activity: |
|--|---|
| Rely on research propositions to link data to the research questions and purpose | The research questions and conceptual frameworks used to frame these were used to develop the data collection tools and guide the data analysis. |
| Develop a case description using a descriptive framework | The discussion of the findings provides a description of the case. |
| Use both quantitative and qualitative data. | Qualitative data was collected and analysed, consistent with the sociocultural approach. |
| Examine rival explanations. | Previous research, (e.g. EPPE), theories referred to by practitioners and the literature consulted were considered. The situatedness of the study was recognised in terms of the personal qualities of practitioners that might inform their responses, the group dynamics, organisational factors influencing the pedagogy, policy decisions, including adherence to national guidelines, evidence for effectiveness and alternative frameworks for analysis, for example, ecosystemic model used by Odom, et al (2004). |

3.8 Methods of Data Collection

Denzin and Lincoln (2003) asserted that qualitative research includes collecting information from interviews and observations to describe meaning. They defined qualitative research as:

“..... situated activity that locates the observer in the world.” (Denzin and Lincoln, 2003, p. 4)

This definition seemed consistent with the aims and purposes of the research.

Various studies into pedagogy and inclusion collected data from observation and interview (Theodorou and Nind, 2010; Nind, et al., 2010; Florian and Black-Hawkins, 2011) including Government commissioned research such as REPEY (Siraj-Blatchford, et al., 2002). It was felt these were valid methods of data collection for this research. Some of these studies collected data over extensive periods of time (Florian and Black-Hawkins, 2011) and/or included video observations (Nind, et al., 2010). This was not possible within the constraints of the study and the ethical considerations due to the limitations of time and conflicts with professional role.

Data was collected using the following methods:

Table 3.13: Data Collection Method

| Method | Process |
|---------------|--|
| Interview | Semi-structured interviews with practitioners (teachers and teaching assistants) working with children with severe and complex additional needs (children with AN) in the special provision and mainstream class and practitioners working with children without identified additional needs (children without AN) in the mainstream class |
| Observations | Narrative observations in the MS and SP classes to inform a description of the context. Observations of MLEs between practitioners and children with AN or children without AN. MLEs were described as a shared, learning activity in which the practitioner intervened to support the child's learning and development. Observations of two children: a boy with AN and a girl without AN during a typical session. |

Information about the research was distributed to practitioners in the setting and included in a newsletter to parents. Additional information was provided to those participating directly in the research in the form of letters and leaflets. Informed consent was sought from practitioners interviewed and the parents of children who participated in the MLEs or who were 'followed' in nursery. The data collection that involved children proceeded on their terms and was sensitive to signs of withdrawing assumed consent, allowing them to 'opt out,' as indicated by their behaviour.

3.8.1 Semi-structured Interviews

Semi-structured interviews were chosen as these involve predetermined questions that can be modified according to the response made (Robson, 2002). Data can be collected in a flexible, naturalistic way that reflects the interests of individual practitioners and is responsive to their contributions to maintain rapport. The aim was to have a guided conversation informed by the research questions. Robson (2002) highlighted concerns about reliability and bias in this

process. It was noted that the variation in responses meant direct comparison was not always possible at the data analysis phase. Predetermined questions were used to focus the discussion and to manage the duration: around one hour. The interview schedule (see Appendix A) was developed based on guidance from Robson (2002).

Interviews were conducted in the staff room of the nursery to enable practitioners to feel comfortable and as relaxed as possible. It was hoped this might address any perceived power imbalance associated with the researcher-participant role or professional roles. Interviews were conducted during the researcher's own time to further address this. Supply cover was funded to release practitioners in order to protect the time and enable them to respond freely. Conducting the interviews on site might have introduced a loyalty bias.

Interviews were conducted with 13 practitioners:

Table 3.14: Practitioners Interviewed

| Role: | Class: | Working with: | Number: |
|---------------------|-------------------|----------------------|----------------------------------|
| Teacher | Mainstream | Children without AN | 2 (including Deputy Headteacher) |
| Teaching Assistant | Mainstream | Children without AN | 2 |
| Teaching Assistant | Mainstream | Children with AN | 3 |
| Teacher* | Special Provision | Children with AN | 2 (including SENCO) |
| Teaching Assistant* | Special Provision | Children with AN | 4 |

(*This included pilots with a teaching assistant and teacher)

The Headteacher was not interviewed as the focus was on the everyday practice in the nursery and it was suggested that the Deputy Headteacher led on this.

Originally six practitioners (two teachers and four teaching assistants) were identified using purposive sampling (Robson, 2002). This was negotiated and discussed with the Headteacher

and increased as a consequence of pilots, requests from the Headteacher to include named practitioners and requests from individual practitioners. It was felt this was beneficial in terms of protecting the anonymity and confidentiality of responses (for example, more than one teacher in mainstream was interviewed) and collecting more information within the community plane.

Informed, written consent, including consent to make an audio recording, was sought before the interviews. The interviews commenced with general questions about role, length of service, interests and qualifications, then proceeded to specific questions linked to the research questions relating to practice, learning and cognitive development and participation. A further question relating to future developments was included to close. Practitioners were given a list of the predetermined questions at the start of the interview to refer to.

Questions were followed up with prompts to elicit practitioners' constructs. Techniques from Personal Construct Psychology (PCP), as described by Fransella and Dalton (2000) typically used in EP practice were used to follow up responses. It was hoped the questions would help practitioners to describe the pedagogy and 'tell their story' (Mills, 2001, p. 297). Responses to questions were recorded contemporaneously to inform further questioning and an audio recording was made for later transcribing. Excerpts from the interviews are provided in Appendix E to illustrate sample responses to questions.

The interviews lasted approximately one hour as recommended by Robson (2002).

The interview questions were piloted with one nursery teacher (NT) and one teaching assistant (TA) to determine the accessibility and relevance of questions. The interview schedule was modified to include questions relating to outcomes and questions about future developments as a consequence.

The responses were summarised and reflected back to practitioners during the interview process to check validity. Transcripts were provided later. At the end of the interview, practitioners were given the opportunity to expand on any responses and asked about the interview process. They tended to respond positively, suggesting it was not too arduous.

The intention was that practitioners would describe the everyday practice, learning and cognitive development and participation and that a co-construction of the pedagogy within the community plane would emerge. Their views as active participants in creating the pedagogy through planning and delivery would be represented and contribute to this.

3.8.2 Observation of MLE

During the interviews, practitioners described situations in which they worked with individual children to move their learning on. These seemed consistent with SST, as described by Siraj-Blatchford et al (2002) and MLEs as described by Feuerstein (cited by Kozulin, 1998; Lidz, 2002). A brief description of MLE was given and some practitioners were asked to identify an activity they planned to share with a child during the next few weeks with a focus on supporting the child's cognitive development.

Practitioners were asked to identify a child they would be working with and seek consent from parents for the child's participation. A letter and leaflet were provided to facilitate informed consent. This included consent for audio recordings to be made. Direct contact was also made with the parent before the observations to clarify the purpose of the research and to verify consent. The intention was to observe an activity that constituted an MLE that was part of the planned, everyday practice within the nursery.

Six MLEs between six practitioners and six children were observed. The focus was on the practitioners' mediation of learning, however, the child's responses were recorded as part of the pedagogical interaction. Minimum information about the child was collected as the child was not the focus of the research and this could have conflicted with professional role.

The MLEs involved two children without AN in the mainstream class (MS), one child with AN in the mainstream class and three children with AN in the specialist provision (SP). The children with AN all had identified speech, language and communication needs (SLCN) and learning needs. One child also had medical needs. Two children also had visual impairment (VI) and physical needs and were in wheelchairs. The data collection tool and method was piloted with a TA and a child with AN.

Table 3.15: Sampling Information with regard to the MLEs Observed

| Practitioner | Activity | Child | Context | Duration (minutes) |
|---------------------|--|---|----------------|---------------------------|
| Teacher | Making a house from a cardboard box. | Girl, 3 – 4 years old. No AN. | MS | 48 |
| Teaching Assistant | Sharing books. | Girl, 3 – 4 years old. No AN. | MS | 25 |
| Teaching Assistant | Playing a board game. | Boy, 3 – 4 years old with AN (SLCN, learning needs). | MS | 10 |
| Teacher | Exploring water and blocks. | Boy, 3 – 4 years old with AN (SLCN, learning needs and medical needs). | SP | 15 |
| Teaching Assistant | Exploring balls and sensory toys. Moving independently. | Boy, 3 – 4 years old with AN (SLCN, learning needs, VI and physical needs). In wheelchair – able to move on knees. | SP | 10 |
| Teaching Assistant | Exploring porridge and dry oats; making a picture. Accessed in wheelchair. | Boy, 3 – 4 years old with AN (SLCN, learning needs, VI and physical needs). In wheelchair. | SP | 30 |

Practitioners identified MLEs that were part of everyday practice to provide opportunities for naturalistic observation and to increase validity. They devised the activity and involved the child. They were asked to conduct the activity in the way they typically would, allowing the child to leave or finishing the activity as they felt appropriate given the child's responses. It was hoped this would allow the child to participate in a way that would be natural for them and withdraw from the activity as and when they typically would. The intention was to create a pedagogical interaction that was typical of everyday practice rather than a contrived learning

situation, whilst recognising that young children respond differently. As a consequence, the activities, duration and interactions varied significantly.

Naturalistic observations were made using an informal approach. Observations were recorded using a data collection tool (see Appendix B) similar to that used in professional practice with the aid of a category system to facilitate recording. Information was recorded about the context, time, activity and interaction between the adult and child; what the adults did or said and any mediation used. The child's response was recorded as part of the pedagogical interaction. It was hoped that the observation would provide an ongoing record of the dynamic process of the pedagogical interaction, recognising the influence of context and any changes observed. Excerpts from a completed observation schedules are provided in Appendix E to illustrate how the data collection tool was used.

As the focus was to capture everyday pedagogical interactions as far as possible, it was anticipated that MLEs might differ significantly in terms of activity, duration and context. It was hoped having a category system might introduce some consistency of recording across different MLEs to enhance validity.

The observations were piloted with a teaching assistant and child with AN in the SP class. The data collection tool emerged from this process. It was recognised that specific information about time, actions, activity and context might need to be recorded and this could change during the MLE.

The observations included making written records of language used within the pedagogical interaction. The intention was to transcribe the audio recordings, however, this was not possible due to the intrusion of background noise. The audio recordings were referred to for the excerpts and to verify language used where possible.

Structured observations were considered, however, experience of conducting observations in EP practice suggested that some of the subtleties of the interaction might be lost if the focus of the observations was too specific. It was felt having a flexible observation schedule with some guidance to ensure consistency would facilitate accuracy.

It was recognised that the presence of the observer could affect responses. Observations were made at a discreet distance, although near enough to record speech, actions and the interaction. This approach was consistent with EP practice and so it was hoped the observations would not be too disruptive.

Video recording of the observations was considered, however, it was felt this would be more intrusive as it was a deviation from usual practice. Children not involved in the research might be inadvertently recorded. This could present significant ethical issues and could conflict with the EP role. A resolution would be to create contrived pedagogical interactions away from children not involved in the research. It was felt this would not be consistent with the aims of the research: to reflect everyday practice situated in the context of the community of practice.

The nature of the data collection method meant that the MLEs varied significantly and so it is likely that the findings are not generalizable to other children or other pedagogical interactions. The focus was on what the MLEs might reveal about the pedagogy within the interpersonal plane and the mediation of learning and cognitive development.

The MLEs were discussed informally with practitioners afterwards to determine how representative they might be of everyday practice and the observations shared for verification. Practitioners indicated that the MLEs were typical of what they did and that the observations were a fair representation. In some cases, the MLE did not develop as the practitioners expected. This was accepted as typical of practice that recognises and responds to the interests of the child and consistent with ethical practice that participation was on the child's terms rather than imposed.

The observations were transcribed and analysed as detailed later.

3.8.3 Following Two Children

Practitioners identified two children who were involved in the MLE: one without AN and one with AN. Informed consent was sought from parents to follow each child during a typical session. Informal observations were made, however a category system (Robson, 2002) was introduced to enhance consistency of recording as it was anticipated that there might be significant differences between the experiences of the two children.

As the focus of the observations was on the activities and interactions experienced by the child, few details relating to individual children were recorded.

Table 3.16: Information about Children Observed

| Child | AN? | Class | Access? |
|-----------------------|---|--------------|------------------------------------|
| Girl, 3 – 4 years old | No identified AN | MS | Independent |
| Boy, 3 – 4 years old | AN including SLCN, learning needs, VI and physical needs. Used a wheelchair and standing frame. Moved independently on his knees. | SP | 1:1 support from practitioner (TA) |

The observations were transcribed and analysed.

Time sampling was considered as an alternative data collection method, however, it was felt this might not capture the contextual influences and details of the interactions observed.

Siraj-Blatchford et al (2002) described a formal observation technique used in their research that focused on one child: the Targeted Child Observation (TCO). This described the behaviour of the child in 20 minute periods and observations were coded for time, narrative of events and categories of interaction. A similar approach was considered, however, the observations made by Siraj-Blatchford et al (2002) focused on the child's behaviour, rather than their participation in the activities and interactions available, the focus for this research. It was also felt unnecessary for such a small sample.

The aim was to collect information for the entire session as the constraints of the study meant it was not possible to return several times to collect information sampled for short periods (e.g. 20 minutes) across a number of sessions. It was proposed that the pedagogy is dynamic; therefore it was likely that the sessions would differ and the child's experiences and interactions might change as a consequence. This could be a threat to validity.

It was recognised that data collected from observations of one session related to that session only and offered a proxy indicator of that child's experiences in nursery. They are not necessarily generalizable. The intention was to collect information relating to the pedagogy within the personal plane to reflect how it might mediate participation of the child in that session as an indicator of mediation of participation over time.

It was recognised that the process of observing and recording would involve some loss of data and inaccuracy in recording, particularly when following an active child. For this reason, a category system was introduced to enhance consistency of recording and validity of findings.

3.8.4 Observation of Sessions

Two sessions were observed: one in the mainstream class and one in the special provision class to collect information about the context, including the routine. Naturalistic observations were made to provide contextual information. These were transcribed later and informed the description of the setting.

3.9 Data Analysis

Thematic analysis of the data was informed by Miles and Huberman (1994), Braun and Clarke (2006), and Robson (2011). They emphasised adopting a systematic approach and avoiding imposing researcher bias on the interpretation of the data.

Braun and Clarke (2006) defined thematic analysis as:

“Thematic analysis is a method for identifying, analysing, and reporting patterns (themes) within data. It minimally organises and describes your data set in (rich) detail.” (Braun and Clarke, 2006, p. 79)

Data was analysed directly rather than using IT software to maintain direct involvement with the data to facilitate understanding and interpretation.

Themes were identified using Braun and Clarke’s (2006) definition:

“A theme captures something important about the data in relation to the research question, and represents some level of *patterned* response or meaning within the data set.” (Braun and Clarke, 2006, p. 82)

3.9.1 Analysis of Data from Interviews

Braun and Clarke’s (2006) six phases (p. 87) were followed to inform the data analysis:

Table 3.17 Phases of Thematic Analysis (Braun and Clarke, 2006) Applied to the Data

| Phase | Process applied to the data |
|--|---|
| 1. Familiarising yourself with your data | The data was transcribed and read through several times. Notes were made as advocated by Miles and Huberman (1994). |
| 2. Generating initial codes | Initial codes were identified relating to the practice, learning and cognitive development and participation. A large number of codes were generated and if was felt these needed to be reduced to make data analysis coherent and manageable. |
| 3. Searching for themes | The themes relating to the research questions: ‘Practice’, ‘Learning and Cognitive Development’ and ‘Participation’ were applied systematically to the data as reference was made to these themes in response to questions throughout the interview. This allowed further themes and sub-themes to be identified consistently across the data. |
| 4. Reviewing themes | <p>Matrices relating to each theme were created, as suggested by Miles and Huberman (1994) and applied to the data.</p> <p>Sub-themes were identified based on the responses given to provide a coherent way of grouping the data.</p> <p>This was checked against the data a number of times.</p> <p>These were analysed to determine common themes referred to by all or most practitioners and themes that indicated differences and allowed practice and pedagogy to be compared for practitioners working with children with additional needs and children without additional needs; and practitioners working in mainstream (with children with and without additional needs) and the special provision.</p> <p>These were shown as matrices.</p> <p>Some themes were ‘collapsed’ into other themes as the responses seemed to relate to an overall theme, for example, the theme ‘assessment and planning’ was felt to relate to practice.</p> |
| 5. Defining and naming themes | <p>The themes identified were found to be consistent with Rogoff’s (1995) description of the Community Plane and so were labelled with reference to this. It was felt more appropriate to describe the pedagogy in terms of practice, values, adult role, mediation and outcome rather than everyday practice, learning and cognitive development and participation. The former represent a way of achieving the latter.</p> <p>The themes were defined using the practitioners’ responses and descriptions.</p> |
| 6. Producing the report | The findings chapter was drafted and quotes relating to themes selected from the transcribed interviews. |

Braun and Clarke (2006) criticised using interview questions as themes, however, it was noted that practitioners' responses to different questions referred to everyday practice, learning and cognitive development and participation. These seemed to be present across the responses and data.

Characteristics relating to the community plane, as described by Rogoff (1995) were used to organise and categorise the themes. Braun and Clarke (2006) described themes as inductive or theoretical. It was felt that the process was both inductive in terms of identifying initial themes and theoretical in terms of categorising and organising data using themes from the conceptual frameworks. Braun and Clarke suggest adopting a theoretical approach might provide a less rich description, however, it was felt appropriate to use themes consistent with the conceptual frameworks informing the research. Miles and Huberman (1994) described the process of data analysis as reductionist so some loss of detail was to be expected.

The aim of the research was to provide a description of the pedagogy and the way in which it might mediate learning and cognitive development and the participation of all children. The data analysis focused on what practitioners said, rather than the way in which they said it.

A series of thematic networks (Robson, 2011) were created to investigate the validity of the themes, showing the relationships between the themes and the respondents, research questions and conceptual frameworks.

Further investigation suggested that the differences between practitioners working in the mainstream and the specialist provision were not significantly different from the differences

between practitioners responses for those working with children with AN and without AN, so this was not pursued.

3.9.2 Observations

The observations of the MLE, following two children and observations in the setting were analysed in a similar way to that outlined above. They were transcribed, read and annotated a number of times. Themes were noted and applied to the data. It was felt that the categories used to inform data collection were consistent with the themes identified.

3.9.2.1 MLE

Matrices showing the categories for each MLE were created and themes identified. These were analysed to identify commonalities and to compare the MLEs for children without AN and children with AN; for children in MS (with and without AN) and for children in the SP. Differences identified between the observations of MLEs in MS and SP were felt to be consistent with differences identified between children without and with AN, suggesting they might be attributable to the needs of the child rather than the context.

The elements of an activity system, as described by Russell (2002) were also applied as themes to analyse the data, as were characteristics of the interpersonal plane (Rogoff, 1995). These did not seem to capture the subtle changes in the activity and interaction evident from using themes based on the categories identified. They seemed to provide a static description, rather than capturing the dynamic process, so they were not included.

3.9.2.2 Following Two Children

Matrices were created showing the data collected for each child within the themes identified. These were analysed to identify common themes and to compare the experiences of the child without AN with the experiences of the child with AN. The definition and descriptions of the themes were based on the data collected.

A description of the findings is presented in Chapter 4. The findings were shared with practitioners at a staff meeting and a research report was provided (see Appendix F).

3.10 Ethical Issues

Undertaking research that involves people, particularly young children, requires careful consideration of the ethical issues. Ethical considerations are also fundamental to EP practice. Reference was made to the BPS (2009) Code of Ethics and Conduct, BERA (2004) Revised Ethical Guidelines for Educational Research and HPC (2008) Standards of Conduct, Performance and Ethics to identify and address the main ethical challenges of the research. The tables below indicate how these were applied.

Table 3.18: BPS (2009) Code of Ethics and Conduct

| Ethical Challenge: | Actions: |
|---------------------------|---|
| Respect | <p>Data was recorded anonymously, treated as confidential and stored securely.</p> <p>Informed consent was obtained to collect the data in the nursery from practitioners and adults responsible for children. This included consent to make audio recordings.</p> <p>Informed consent was obtained from parents on behalf of the children observed.</p> <p>Letters and information relating to consent made it clear that practitioners, parents and children had a right to withdraw and any data collected would be destroyed.</p> |
| Competence | <p>The research was conducted within the competencies of the researcher. This included being aware of limitations of understanding of specific research methods/methodology and conceptual frameworks and awareness of limitations to competency with regard to specific techniques used to elicit constructs e.g. Personal Construct Psychology</p> |
| Responsibility | <p>Actions were taken to ensure the psychological wellbeing of all members of staff by informing them about the study and sampling restrictions.</p> <p>Actions were taken to ensure the psychological wellbeing of participants in the interviews by conducting them on site at a time convenient for them.</p> <p>Actions were taken to ensure the psychological wellbeing of children participating in the MLEs by asking practitioners to conduct these in ways that were consistent with everyday practice, allowing the child to come and go as usual and/or responding to signs that the child was withdrawing from the activity.</p> <p>I endeavoured to remain aware of personal values and any potential conflicts.</p> <p>Potential risks to psychological wellbeing associated with the methods used for sampling and data collection were addressed through the data collection procedure.</p> |
| Integrity | <p>Being clear about distinction between role as a researcher and professional role (EP) by collecting data during personal time.</p> <p>Being sensitive to and recognising potential conflicts of interest between roles by limiting details collected relating to individual children.</p> <p>Being sensitive to and recognising potential power imbalances linked to professional role.</p> <p>Being sensitive to and aware of potential coercion arising from perceptions about professional role and as a consequence of the long-term working relationship with members of staff. Practitioners were provided with information about the research, consent sought from the Headteacher to carry out the research, data collection negotiated with Deputy Headteacher and practitioners invited to participate and given frequent opportunities to withdraw consent.</p> |

Table 3.19: BERA (2004) Revised Ethical Guidelines for Educational Research

| Ethical Challenge: | Actions: |
|--|---|
| Responsibility to Participants | <p>Ensured informed consent was voluntarily given by adults and by parents on behalf of children.</p> <p>Aware of and sensitive to potential subterfuge and deception arising from methods used. As the study was exploratory, it was anticipated there could be possible unintended consequences of exploring constructs and pedagogy. Ways of managing this were identified at the outset.</p> <p>Ensuring practice and data collection was consistent with Articles 3 and 12 of the United Nations Convention on the Rights of the Child.</p> <p>Ensured that all actions were in the best interests of the child. This was the primary consideration in setting up the MLE and the observations in the setting.</p> <p>Ensuring the child was able to express their views and withdraw consent e.g. by leaving the activity.</p> <p>Awareness of and sensitive to barriers to withdrawal of consent, for example, a disabled child who was not independently mobile.</p> <p>Awareness of and responsive to attempts by the child to communicate distress, dislike and disinterest and taking appropriate actions.</p> <p>Sensitive to and responsive to potential discomfort and distress arising from the MLE.</p> <p>Aware of and sensitive to imposing undue bureaucratic overload by asking practitioners to organise consent. This was negotiated with them.</p> <p>Data Protection Act (1998) was adhered to.</p> |
| Responsibility to Sponsor | <p>Research was conducted with awareness of responsibilities to employer.</p> <p>Awareness of responsibilities to nursery, as an organisation, staff working in it and Headteacher as facilitators of the research.</p> <p>Awareness of impact on capacity and competence of undertaking research alongside professional role and work commitments.</p> <p>Leave was taken to facilitate this.</p> |
| Responsibility to Educational Researcher community | <p>Endeavouring to understand the methods of data collection and being aware of the limitations.</p> <p>Giving respect and consideration to alternative methods.</p> <p>Considering the advantages and disadvantages of alternative methods in the context of the setting and research study.</p> |

Table 3.20: HPC (2008) Standards of Conduct, Performance and Ethics

The following standards were felt to be relevant to ensure research activities were consistent with EP professional guidance.

| Standard | Actions |
|-----------------|--|
| 6 | I ensured that I acted within the limits of my knowledge, skills and experience. For example, using PCP as a technique in ways consistent with EP practice. |
| 7 | I ensured that I communicated effectively with participants (practitioners, parents/carers and children) providing additional information in the form of letters and leaflets as well as personal contact. |
| 12 | I was aware of any limitations to my performance or judgment and the affect this might have on my practise, and acted accordingly. This was a consideration as the research was conducted alongside professional practice. |

3.11 Potential Threats to Validity

Qualitative research is complex. The research involved collecting data from situated practice and activity that was influenced by a range of factors that could not necessarily be observed and considered. This suggested potential threats to validity and the usefulness of any findings.

Robson (2002) identified potential threats to validity in flexible designs that were addressed in the following ways:

Table 3.21: Threats to Validity (from Maxwell, 1992, cited by Robson, 2002):

| Type | Threat | Addressed by: |
|----------------|--|---|
| Description | Inaccuracy, incompleteness of data | Accuracy of recording Thoroughness of analysis Design of data collection tools |
| Interpretation | Impose framework/meaning rather than allowing this to evolve/emerge. | Conceptual frameworks from the sociocultural approach were used to guide data collection; however, research questions were not framed as hypotheses. Data analysis was informed by conceptual frameworks considered. Bias was addressed by using thematic analysis rather than applying themes directly from the conceptual frameworks. |
| Theory | Not considering alternative explanations. | Yin (2009) advocated considering rival explanations, as discussed previously. These were considered throughout the research. |

Robson (2002) also suggested the following actions to reduce threats to validity. The table below indicates how they were realised in the research.

Table 3.22: Reducing Threats to Validity in the Research

| Reduce threat by: | Action: |
|--|---|
| Prolonged involvement e.g. period of years/weeks/ months. “Researchers who spend a long time in the setting tend to become accepted and any initial reactivity reduces.” (p. 173 – 174) | As link EP there was an established relationship and involvement with the nursery. Research was negotiated with the Headteacher, Deputy Headteacher and other practitioners in the nursery. Practitioners and children were used to the researcher’s presence in setting in the EP role. Data was collected over a three week period in May/June 2011. |
| Triangulation: multiple sources of data | Data was collected from semi-structured interviews and observations. Data was shared with practitioners to establish consistency with practice and views. |
| Peer debriefing and support: guard against researcher bias | Use of local arrangements for peer support from EP colleagues. Use of supervisor. |
| Member checking: return to participants to present data/interpretation. Need to agree rules to govern situation. | This was embedded into the data collection process. The findings were shared at a staff meeting. |
| Negotiate case analysis: seek instances that ‘disconfirm’ theory to avoid researcher bias. | Peer support, support from supervisor. |
| Audit trail: record all activities | Research diary/journal maintained throughout data collection, analysis and interpretation phase. |

It is possible that rejecting alternative designs (e.g. Realistic Evaluation) in favour of a case study approach introduced bias. The data collection and interpretation might be influenced by the researcher's interests and factors within the nursery. This was anticipated as the research was informed by a sociocultural approach: participants in communities of practice contribute to and influence that practice (Lave and Wenger, 1999).

Gender bias might also affect the findings. The adults involved were female. The children without AN were also female, however, the children with AN selected by practitioners to participate in MLEs and subsequent observations in the setting were male. Most children attending the SP were boys. The sampling might, therefore, reflect the gender balance in the setting.

3.12 Conclusion

The research developed from Vygotsky's (1978) theory and adopted a sociocultural approach that assumes actions and activity are situated within communities of practice and co-constructed by participants in those communities. This is consistent with the interpretivist paradigm. It was therefore qualitative research into the pedagogy.

The research used the case study method, regarding the pedagogy in the nursery as a unique case. Data was collected from interviews and observations to investigate the pedagogy at three levels, corresponding to Rogoff's (1995) Three Planes of Analysis, focusing on how the pedagogy might mediate learning and cognitive development and inclusion in terms of children's participation in the interactions, actions, activities, social practices and routines in

the nursery. This included collecting information about practitioners' constructs relating to the pedagogy, learning and cognitive development and inclusion and observing everyday practice including MLEs between practitioners and identified children and two children's experiences in nursery. Information was collected about the pedagogy in relation to children with and without additional needs (AN).

Data was collected about the pedagogy within the community plane from semi-structured interviews with practitioners (teachers and teaching assistants) working with children with and without AN in the mainstream (MS) and the specialist provision (SP). Data was collected from observations of MLEs between practitioners and identified children with and without AN in the MS and the SP to provide information about the pedagogy within the interpersonal plane. Data from observations of two children: a boy with AN and a girl without AN during typical sessions was interpreted to provide information about the pedagogy within the personal plane. Observations were also made during sessions to provide a description to contextualise the data collected.

The findings are presented in the following chapter as they relate to the pedagogy within each plane: community, interpersonal and personal.

CHAPTER 4

PRESENTATION OF FINDINGS

4.1 Introduction

This section will describe the findings from the analysis of data collected from semi-structured interviews with practitioners working with children with and without severe and complex additional needs (AN), observation of Mediated Learning Experiences (MLE) between practitioners and children with and without AN and observations made from following two children, one without AN in the mainstream class (MS) and one with AN in the specialist provision (SP).

Lenses corresponding to Rogoff's (1995) Three Planes of Analysis were applied to the data and the findings will be presented to describe the pedagogy within each of these planes: community, interpersonal and personal.

Table 4.1: Characteristics of Rogoff's (1995) Three Planes of Analysis

| Concept | Description | Plane | Characteristics |
|-----------------------------|--|---------------|--|
| Apprenticeship | Individuals participating in socially and culturally organised activities that support development | Community | Activities , practices, organisation, purposes, resources, means, cultural tools, values |
| Guided Participation | Involves learning with and from others in a process similar to the construct of the MLE | Interpersonal | Direct interaction, roles and structures, cultural activities, communication, collaboration, routines, goals |
| Participatory Appropriation | Process of change arising from participation in the wider sociocultural activity | Personal | Participation, roles, change over time, transformation, dynamic, |

Findings from the interviews will be presented to describe the pedagogy within the community plane; findings from the observations of MLE will be presented to describe the pedagogy within the interpersonal plane and findings from observing two children in typical sessions will be presented to describe the pedagogy within the personal plane.

For each plane, the findings will be presented as common themes relating to the pedagogy for all children and themes that relate to the pedagogy for children with and without AN will be compared.

Each section will begin with a description of the relevant plane with a matrix showing how the main themes identified were felt to relate to the plane. This will be followed by a description of the findings with quotes or vignettes to exemplify.

The section will begin with a brief description of the nursery to provide a context for the findings. This is based on naturalistic observations made during sessions and information provided by practitioners.

4.2 Description of Context

The nursery was co-located with a Child Development Centre (CDC), a Children's Centre and a private provider. It was situated in an area with high indices of deprivation. Children from the local area attended the mainstream provision (MS) and children from across the borough attended the specialist provision (SP). Places in the SP were allocated following multidisciplinary assessment at the CDC.

The nursery consisted of two classes: a MS class with up to 46 children in each session and a SP with up to twelve children in two groups: children aged two to three years old and children aged three to four years old. The ratio in the MS class was 1:13 and the ratio in the SP was 1:2. There were up to eight places in the MS class for children with additional needs who were supported by a teaching assistant (1:4 ratio). The nursery was staffed by qualified teachers (NT) and teaching assistants (TA). There were qualified teachers in each class (MS and SP).

The nursery offered a range of activities and learning environments. This included a multisensory room, art studio, dance studio and a hard and soft landscaped outdoor play area. There was a large shared outdoor play area and a smaller outdoor play area mostly used by children attending the SP. The outdoor play area included a water feature, sand pit and slide. A range of sensory and play activities were available in the classrooms. There was access to a small library in the Children's Centre.

Sessions at the nursery followed a similar routine: most children were brought to the nursery by parents or carers. Some children attending the SP were brought in by taxi escorts. Sessions started with free play: children choosing play activities and adults assisting them as and when appropriate. This was followed by an adult-led group activity for the greeting at around the same time in each class. The greeting had a routine of activities: saying hello, talking about the day of the week and counting the children with songs and rhymes. This was followed by adult-led activities in the group to support learning and development. The children then had an extended period of play before an adult-led group at the end to conclude the session and say goodbye to the children.

Groups of children from the MS class made regular visits to a Forest School and children in the SP made regular visits into the community.

4.3 Community Plane

Findings from the semi-structured interviews with practitioners will be presented to describe the pedagogy within the community plane. The findings will be presented as themes relating to the practices, learning and cognitive development and participation of children attending the nursery. Five themes emerged from the data: everyday practice (practice within the session), values, adult role, mediation and outcome.

The findings will be described as common themes relating to all or most children and as a comparison between themes relating to children with and without AN, based on practitioners' responses. Quotes from practitioners: teachers (NT) and teaching assistants (TA) working in mainstream (MS) and specialist provision (SP) and TA s working with children with AN in mainstream (ANTA MS) will be given to exemplify the findings where appropriate.

It was felt that the themes identified from the analysis of the data were consistent with some of the characteristics of the community plane, as described by Rogoff (1995). She suggested that characteristics of the community plane included: activities, practices, organisation, purposes, resources, means, cultural tools, values.

Table 4.2: Main Findings from the Interviews with Practitioners

| Themes | Practice | | Learning and Cognitive Development | | Participation | |
|--------------------------|--|--|---|--|---|--|
| | Common | Comparison | Common | Comparison | Common | Comparison |
| Everyday Practice | Routine Experience Assessment and planning | Routines Activity Differentiation | Differentiation Theories Experience Knowledge of the child | Differentiation Activities Communication | Context Adaptation Activities | Group Access Activities |
| Values | Continuous provision Balance Independence Collaboration Individualised | Autonomy Balance Individualised Collaboration | Play Social process Interests Factors Learning environment | Independence Learning style | Benefits for all Access Individual Differences Disposition | Individual differences Differentiation |
| Adult Role | Support and facilitate learning | Enable Assist | Independence Identify interests Know the child Create environments | Enable Intervene Develop independence | Facilitate interaction Sensitive to individual needs | Invite Access Reassure Inform Choice |
| Mediation | Tools and artefacts | Tools and artefacts | Tools and artefacts Model Encourage Peer mediation Language Teaching | Tools and artefacts Language Encourage Active involvement Repetition Approach | Encourage Prompt Access Wellbeing | Peer mediation Model and encourage |
| Outcome | Affective response: positive emotions Progress | Contribute to planning Development | Progress | Independence Affective response | | |

4.3.1 Everyday Practice

Table 4.3: Themes relating to Everyday Practice

| | Practice | Learning and Cognitive Development | Participation |
|--------------------------|--|--|---|
| <i>Common</i> | Routine Experience Assessment and Planning | Differentiation Theories Experience Knowledge of the child Collaboration | Activities Context Access and adaptations |
| <i>Comparison</i> | Independence with routines Activity Differentiation | Differentiation Activities Communication | Groups Access Activities |

4.3.1.1 Practice

Common Themes

The practice included shared routines at the start and end of the session and opportunities for children to come together in groups for adult-led activities, for example, the greeting. The routine included times when children could move fluidly between MS and SP and when children with AN could access the MS class and outdoor area.

Practitioners felt experience was as significant to practice as training and professional development.

Assessment and planning were informed by observation of children's interests. Observations were shared formally (on a planning board in MS; overview sheet in SP) and informed activities provided the next day. This was reviewed at end of the session in a cyclical process. There were also regular planning meetings to review and discuss children's interests and activities. Practitioners felt formal and informal observations were significant to

understanding children's development. It was better to capture 'everyday' activities rather than contrived assessment activities. Photographs were used as evidence.

"...in that two hour block, we are, you know, constantly observing the children even when we are at play with them to see what resources we need to put in the next day for them and record all of this on a planning sheet ... to see how we can take the learning on without it actually kind of spoiling what they're doing" NT1, MS

"Each week have specific activities that are available and that we plan for to ensure that all of those children at some point during their time at nursery engage with those, it may only be for a short period but it gives the opportunity to observe how their skills are developing and to model ways in which they could become involved." NT1 SP

Comparison

Routines and practices for children without AN enabled them to become autonomous: self-registering, accessing snack and choosing activities. Children with AN were supported to follow routines and practitioners felt having consistent routines was important for their learning and wellbeing.

"...routine is important.....it makes that child feel safe in the setting and they know what they're doing and what's expected of them." ANTA1 MS

The routine included timetabled visits to the library on site, the multisensory room and into the community.

Planned adult-led group activities for children without AN focused on developing literacy and numeracy skills and problem-solving. Adult-led small group activities for children with AN focused on developing social skills, communication skills, interactions and turn-taking

through a range of shared activities. This included snack as a whole group activity that provided opportunities to develop communication skills.

“At snack time, we work a lot on communication and depending on my key children again, I either use Makaton or PECS.” TA2 SP

Practitioners working with children without AN provided opportunities for children to work as individuals and in groups according to their preference. They also invited children to participate in adult-led activities linked to their interests. They felt they adapted activities to the level of learning of the group.

The routine and practice for children with AN were based on information about individual children, particularly Individual Education Plans (IEP). Activities were adapted to the individual needs of the child and planned to support progress and to help children to feel safe and secure. This included managing transitions, using consistent cues (including sensory cues) and using Picture Exchange Communication System (PECS) and Makaton to facilitate communication.

“We’re keeping the children safe, which is our very top priority.” TA1 SP

4.3.1.2 Learning and Cognitive Development

Common Themes

Learning and cognitive development was supported by adapting the activity or approach to meet the needs of the individual: adapting the level of support, tailoring the language and

questioning, working at the child's level and pace, and providing resources appropriate for development.

"I think there's perhaps a basic approach but you have to adapt or modify what you do." SNTA2 MS.

This was informed by theories and theorists. Some practitioners specifically referred to 'Vygotsky' and 'Piaget' as influencing their practice as well as other pedagogical influences, including Reggio and schemas. Some had difficulty identifying specific theories and most practitioners felt that practice was influenced by knowledge, learning and development gained from experience.

"Vygotsky - that's about taking the learning, pushing their learning a little bit higher than what they would do on their own." NT1 MS

"Experience definitely. I think knowledge has to be there and you do draw on that not wholly consciously all the time. But experience comes into it an awful lot." NT2 MS

"Although I've got, I've got my qualification, and my B.Ed. degree, I've learnt more hands on and through my practical knowledge and experience of working with young children." NT2 SP

Some practitioners indicated that training courses particularly influenced their understanding of how children learn and their cognitive development.

"Opportunities to attend courses by people who are respected and who have interesting ways of approaching things or new ideas and I think that's where I get my ideas from rather than specific theorists." NT1 SP

Practitioners emphasised the importance of knowledge about individual children, their individual abilities and needs and what might move learning on as informing practice.

“It's all about knowing your children and knowing what stage of development they're at and what is right for them. Or what is the next-step for them.” NT2 SP

“You have to know your children quite well that you're working with, so, because they're all, aren't they, if you're in a group, they're all at different levels of their development, they're not all at the same stage.” TA1 MS

Practitioners' responses suggested they collaborated to develop practice.

“We discuss in nursery how we think things are going and what the child might benefit from based on what they enjoy. A colleague might suggest an activity and say that a child has enjoyed it. I would follow that up and see what they can achieve.” ANTA3 MS

“We work as a team and you learn things from other staff who've got experience in different areas than yourself.” TA4 SP

Comparison

Practitioners working with children with AN adapted their approach, activities and communication to recognise the medical and developmental needs of the children they worked with. Activities were adapted to make them sensory, tactile, stimulating and interesting. They were linked to interests and familiar experiences or programmes and integrated into the routine. Communication was adapted to include using pictures (PECS) to help children to make choices.

Some practitioners also provided adult-directed activities linked to the child's IEP in a one-to-one or small group context to develop communication or work on an identified focus for development.

4.3.1.3 Participation

Common Themes

Practitioners felt most activities could be adapted and children often chose to share activities. Activities outdoors were felt to be particularly accessible and appealing to all children. Children shared activities when they had common interests or shared schemas. Sensory activities or activities based on familiar experiences were particularly suitable. Some planned activities, such as baking, required children to be in a group.

Participation was influenced by the context and facilitated when children were playing outdoors, when they were in small groups (so they had a turn) and when there was an appropriate level of support.

“Outside there are lots of opportunities to be together.” NT2 SP

Practitioners identified potential barriers to participation, including access to some parts of the building and some activities outside, staff ratios and the size of the area. Adaptations that helped children to participate, included: bringing activities to where the child was comfortable; providing resources and making them accessible; and creating accessible environments.

“I think participation is about us making sure that the environment and the resources both indoors and outdoors allow totally inclusive participation and practice but sometimes there has to be an adult making sure that they take that child or bring something to that child if it’s appropriate.” NT2 SP

It was felt that children could access activities together in ways that were appropriate for their skills and abilities: a child with AN could explore the sensory aspects of jelly, whilst a child without AN could investigate its properties. Children with AN could be assigned a valued role within the activity, for example, children without AN were exploring connections with the guttering; a child with AN who was interested in rolling a ball in the guttering was given the role of ‘tester.’

Comparison

Children without AN were expected to participate in groups for different purposes. This included a smaller group for the greeting and a large group at the end of the session. A small number of children could elect to go through to the SP or were invited to go with children with AN to on-site visits to the library.

“At the beginning of the session, the children from mainstream come into nursery and play alongside or with the children.” TA4 SP

Children with AN could access the mainstream class. They were supported to participate in the routines and activities in the MS class and group activities were adapted for them. Practitioners felt they encouraged participation and sharing in all activities, rather than planning shared activities.

Practitioners working with children with AN suggested that all children could share sensory activities, such as baking, water feature, gluing and sticking, painting and Playdough and links to the community, including visits by outside educational groups and some trips.

Practitioners working with children with AN were concerned that participation could be imposed on some children. They were conscious of the need to balance access with the child's right to choose, particularly for children who might be unable to express choice or who were dependent on adult support to access activities. They suggested some children might not be ready to participate because of their developmental needs. They might not be comfortable playing with others.

“It just may not be age appropriate, they’ve not reached the stage where they want to play.” TA3 SP

4.3.2 Values

Table 4.4: Themes identified for Values

| | Practice | Learning and Cognitive Development | Participation |
|--------------------------|--|---|--|
| <i>Common</i> | Flexible Balanced Independent learning Individualised approach Collaboration | Through play Social process Interest-led Individuals Independent learners Factors Learning environments | Benefits Access Individual differences Dispositions |
| <i>Comparison</i> | Degree of autonomy Balance Individualised Collaboration | Autonomy Individual differences | Individual differences Adaptations |

4.3.2.1 Practice

Common Themes

Practitioners construed practice as flexible, offering continuous provision with appropriate learning through play.

They felt there should be a balance between child-led learning, with children following their own interests, and adults intervening to move learning on through a variety of experiences.

“It’s getting that balance between not interfering too much and realising do they just need to visit this play as it is or are they ready perhaps for some resources just to be subtly left there as a suggestion or are they ready for some more obvious adult input. It’s always a little bit of a balancing act.” NT2 MS

Practitioners regarded children as independent learners. Children were encouraged to follow their interests and make choices within an accessible environment.

Practitioners adopted an individualised approach based on observing children’s interests and meeting individual needs.

Practitioners valued collaboration and collaborative working: staff working together as a team: planning, discussing and reviewing progress and supporting each other.

“It might be that I’m giving other staff input whatever they’ve written on the board, whatever their observations are, I might be giving them ideas, or you know, giving them suggestions about how it could go on and then equally, they’re perhaps doing the same with me.” NT1 MS

Comparison

Children without AN were regarded as autonomous learners, whilst, children with AN were felt to need more individualised support to meet their needs with a balance between child-led and adult directed activities; preferred activities and those introduced to develop skills to promote holistic development.

“So again the children initially are encouraged to explore what appeals to them, but then adults will direct them to activities that perhaps they wouldn’t usually choose themselves just with the aim of developing a variety of their skills really rather than letting them always focus on the same things.” NT1 SP

Practitioners working with children with AN felt they needed to learn at their own pace and in their own style, suggesting that the pedagogy was individualised.

“We just need to remember that they are all individual and we need to treat them as such and work with that, rather than expecting them to be something that is considered to be the norm.” NT2 SP

They valued support from colleagues and liaison with parents and outside agencies to inform practice.

Other:

It was noted that practitioners tended to describe practice in relation to the class they worked in (MS or SP) rather than the nursery as a whole. Practitioners who worked with children with AN in MS referred to influences on practice from both settings.

4.3.2.2 Learning and Cognitive Development

Common Themes

Practitioners' felt children learned through play. They regarded learning as a social process: children learn with and from others.

“...which is that the child can be there on their own and you offer them this opportunity to get there and that might be with a teacher but it could be with a peer to get there.” NT2 MS

“But you know, children will learn in their interactions between each other too. And watching each other if they haven't got language enough to share they will watch other children doing something and then try it for themselves.” NT2 MS

“Get the other children involved around me so that they're counting and joining in and he's seeing good role models there.” ANTA1 MS

Children's interests were felt to lead learning. Some practitioners were concerned this could restrict access to wider learning opportunities beyond the child's experiences.

“For young children, obviously learning is best done through play and also it is best done through their interests.” NT1 MS

“If we can tap into his interests, we can take his learning and development forward, but, it is really about observing him and spotting his, his interests.” NT2 SP

“And also that, are we actually narrowing the children's curriculum down by basing everything on their interests and that we have a duty to bring interests to the children which will enable a broad curriculum.” NT1 MS

Children were respected as individuals with knowledge and experience and as having their own learning style: according to their interests and at their own pace. Individual children were felt to be at different stages.

“...they are only little but they come with such a variety of experiences and knowledge, even the children from the most deprived area who perhaps don’t have a lot of experiences, they know something and I’m not on about numbers and colours. I’m on about day to day experiences.” NT1 MS

“I think every child’s different. You know every single child with additional needs or without are different and how they learn are different again. And I don’t think there’s any same group of children or any two children learn the same.” TA SP3

Practitioners felt the pedagogy should develop children’s independence and autonomy as learners.

“You gradually decrease the support that you’re giving them so they’re gaining the independence to do it themselves.” TA2 SP

“It’s to not give them the answer but perhaps provide them with lots of options that they might try out, or it might be they think, they come to the realisation, oh that’s the one that will probably work. Teach them how to learn.” NT2 MS

The pedagogy was informed by consultation with parents and the support of outside agencies, such as health services, which might provide specific information about the child’s needs.

“You need to build up a relationship with the parents to find out information from them because that helps to inform how you would be with the child.” TA2 MS

“We work closely with parents and we do have the luxury in that we have time to speak to them and find out, you know, how they’re managing things at home and what they’re finding works well.” NT1 SP

“Information from other agencies that they might have had some involvement with before they come to our setting or if they are attending.” TA1 SP

Practitioners seemed to co-construct their knowledge and understanding of the child’s strengths and needs with colleagues, with parents and with outside agencies.

Learning and cognitive development was regarded as arising from an interaction between various factors: environmental and contextual factors such as home, nursery, area live in; social factors such as peers and parenting; cultural factors such as the media; within child factors including medical needs, learning style, physical restrictions, emotional needs.

Practitioners felt the environment influenced children's learning and cognitive development, particularly the outdoors and Forest school which afforded children opportunities to investigate their interests.

“...because our environment is the fourth teacher our environment allows the child freedom to investigate to ..use tools and materials in quite a lateral way ..or quite specific ways.” NT2 MS

“...difference about the natural environment is that there is not the same sort of boundaries that you have within school.” TA1 MS

“Children learn by observing others, by watching, by ...experiencing, by feeling safe and secure in the environment and with people that they're with. They need to feel like that before they try things that are not comfortable for them.” NT1 SP

Comparison

Practitioners regarded children with AN as autonomous learners, working things out for themselves, investigating, observing and using resources to explore and find their own answer. Children needed to explore on different scales and in different environments to achieve this. They needed to learn from their mistakes by 'reasoning with themselves', discovering for themselves, problem-solving by themselves so that they would remember. This was described as 'sticky learning.'

“...think doing things on different scales helps children. That they can do it individually and in a big group depending on how.. how they feel or how we’ve taken learning on.” NT2MS

“Because I think that giving them the answer is, is very short-term. And that by problem solving, it becomes more like sticky learning, it’s something they’ll remember and the learning becomes more meaningful because it’s in context and it’s something they’ve worked out.” NT1MS

Practitioners seemed to regard children with AN as dependent learners needing support from adults who understand them and the way they learn, respond to what they do and showing them the possibilities by doing activities with them. This included encouragement, praise and modelling. There was an emphasis on repeated experiences and revisiting activities.

“I think young children learn and develop cognitively by being supported and encouraged .. and encouraged to take part, involved in things which initially they may sometimes not seem that keen to become involved in.” NT1 SP

“It’s about being there ...as a trusted adult, a familiar person that can, that understands all everything about them really and the longer you have them the more you understand each of their needs and the way that they learn and the way that they respond and how they need to be supported to most effectively learn.” NT1 SP

Children without AN were regarded as having individual differences in learning style and disposition. Most children were felt to learn by doing and through ‘hands on’ experiences. They indicated that level of involvement might be significant to learning and cognitive development.

“Some children can listen to something and absorb that straight away. Other children have to do. I think most children of a young age have to have an element of doing.” NT1 MS

Children with AN were regarded as having individual needs that required individualised approaches: giving them time and space to respond at their own pace, meeting their basic needs and helping them to feel safe and secure. Practitioners regarded their development as different: it took longer for them to learn, they had difficulty adapting to free flow play and making choices. Their medical needs affected development. As a consequence, children with AN's developmental pattern was regarded as 'uneven' and they might 'miss out' development. This necessitated collaboration with outside agencies to inform the approach they adopted.

“We also have a good awareness of their medical needs and how to meet their physical needs through close involvement with the CDC and all of those reports that we receive.” NT1SP

4.3.2.3 Participation

Common Themes

Practitioners felt inclusion benefitted all children. All children were regarded as members of the nursery. Practitioners created areas for sharing and joining together, however, they felt they needed to develop opportunities for inclusion across the setting.

Practitioners respected individual differences and the child's choice to participate. Children could access and join in with all activities across the setting, play alongside, interact and be with any other child they chose to be with; learn in their own way according to their interests; move freely across the setting and were welcomed by all.

“The whole ethos of our place is that everybody has that freedom to learn how and when and what they like.” NT2, MS

Practitioners recognised that some children might need adaptations to make activities and the environment accessible.

Practitioners valued children's individual dispositions as enhancing participation. Some children without AN were regarded as particularly, caring, supportive and understanding.

Most children without AN were felt to be flexible and to accept differences in social rules that might facilitate participation.

“Some children who are very in tune with children with additional needs, and so they will definitely play with the children with additional needs. One little girl who was very intuitive with additional needs, very gifted with additional needs.”
NT1 MS

Comparison

Practitioners working with children without AN felt individual differences in social development might affect children's participation: some children need longer to develop socially and to be able to play with other children.

“But some children, as I've said, it might take them nearly the whole year to get to the point of wanting to play and being able to play with other children and that's fine.” NT2 MS

Practitioners working with children with AN suggested that activities needed to be adapted so that children could participate according to their individual strengths and needs to develop skills. It was felt this could be achieved with appropriate planning.

“Really all the activities can be shared with adaptations, usually for the special needs children. You just have to have a different kind of planning.” ANTA2 MS

“...that type of inclusion where you have got your limitations, you just try and adapt and involve the child to play with her peers.” TA3 SP

4.3.3 Adult Role

Table 4.5: Themes identified for Adult Role

| | Practice | Learning and Cognitive Development | Participation |
|--------------------------|---|--|---|
| <i>Common</i> | Support and facilitate learning | Independent learners Identify interests Know the child Create environments Encourage and help Reflexive | Facilitate interaction |
| <i>Comparison</i> | Enabling or assisting Developing communication | Enable or intervene Develop independence as learners | Invite Enable access Inform about differences Dependency |

4.3.3.1 Practice

Common Themes

Practitioners described their role as supporting and facilitating learning by:

- Observing children.
- Mediating learning by modelling, working alongside, questioning, following children’s lead and providing resources.
- Differentiating the pedagogy by working at the child’s pace and responding to their learning style to extend ideas and play.

“We work with children alongside to extend their learning in the activity.” TA1 MS

“I’m just really helping the children to develop and learn at their own pace and in their own style.” ANTA1 MS

“Adults are there to support them and.. to develop their skills.” NT2 SP

“My role is to support children, to follow children with their learning, engage in any extended ideas that can be put in to.” TA2 SP

Teachers highlighted their management role: having an overview of the session and staffing.

Comparison

Practitioners working with children without AN regarded their role as enabling children.

Practitioners working with children with AN regarded their role as assisting children to follow routines and engage with play activities. They focused on individual children to meet their needs, including their care and basic needs and to ensure their wellbeing in nursery. This included helping them to manage transitions.

A significant aspect of their role was to develop children with AN’s language and communication using PECS, Makaton, gesture, as well as speech.

Their practice was informed by the child’s IEP and individualised programmes provided by outside agencies, for example, the speech and language therapist.

4.3.3.2 Learning and Cognitive Development

Common Themes

Practitioners developed children's independence as learners by giving options and helping them to make choices. They enabled and assisted learning, whilst respecting the child's autonomy as a learner. This necessitated a balance between intervening to support and extend learning and giving children opportunities to choose, do things for themselves, solve problems and resolve conflicts.

“Regards to problem solving,... it's a balancing act between stepping back and not interfering in their problem solving and that can be from children having disputes with each other to working out how to get the water from one end of a place to another and working as a group.” NT1 MS

Intervention was based on observing the child, recognising interests and noting successes and difficulties to get to know the child and when to intervene.

“I think the first thing is to observe, Watching where the difficulties are, the child's experiencing watching where the successes are. Noting what's happening, who's involved, what language is being used.” NT2 MS

“If we can tap into his interests, we can take his learning and development forward, but, it is really about observing him and spotting his, his interests.” NT2 SP

Knowing and understanding the child as an individual meant support could be differentiated to suit the child.

“It's about us knowing, knowing his, knowing how he works, knowing his interests, spotting what it is he's interested in and being able to take that learning forward by providing him with something to extend and develop his interest.” NT2 SP

Practitioners supported children's learning and cognitive development by creating environments and providing resources to enable children to investigate and explore.

"...environment allows the child freedom to investigate to ..use tools and materials in quite a lateral way ..or quite specific ways ..I think that is the ..a huge support to how we teach and how the children learn. And our interaction and response to that are key elements to how we ...work with the children." NT2MS

They encouraged children to solve problems independently and try new things.

"It's to not give them the answer but perhaps provide them with lots of options that they might try out, or it might be they think, they come to the realisation, oh that's the one that will probably work. Teach them how to learn." NT1MS

They collaborated with colleagues to review and reflect to inform practice.

Comparison

Practitioners working with children without AN felt their role was to enable learning and to excite children about learning.

"I think as staff, we are enablers." NT1MS

"We do play a role, but we tend to let them have much more involvement themselves in their own learning." TA1MS

Practitioners working with children with AN viewed their role as intervening, assisting and acting as a 'tool' to promote cognitive development and learning by modelling, supporting and encouraging.

“The adult role is to just get your hands in, your feet, whatever it takes to let them just touch the water with their finger, or shredded wheat, or mushy peas or whatever it is. The adult role is just there as another tool.” TA1SP

They might intervene to extend an activity by increasing the challenge (giving a choice of two), introducing the next step (mixing colours) and encouraging children to transfer learning to a similar activity in a different context.

“We’re there to extend their learning further and their interest so they can keep on learning and keep on being motivated and engaged in activities and nursery life.” TA2SP

They encouraged children with AN to become independent as a learners by doing the activity with the child and gradually reducing support until the child could do it themselves.

“To start with I was encouraging him to choose it himself, but towards the end, it was his choice, if he only wanted to go down once, that was fine.” TA4SP

4.3.3.3 Participation

Common Themes

Practitioners felt their role was to facilitate interaction between children by:

- Making sure they know each other’s name;
- Highlighting what children can do;
- Using children’s strengths to involve them;
- Encouraging children to interact with each other;
- Finding opportunities for children to interact;
- Planning activities for children to share;
- Modelling interaction;

- Giving a child with AN a role in the play;
- Asking for specific children to do an activity.

Knowing and understanding individual children supported this.

“I think we are aware of each child, what they prefer and what they try to avoid and part of our role I feel is to, not force them, but encourage them to encounter things that aren’t their preference.” NT1 SP

Comparison

Practitioners working with children without AN facilitated participation by inviting children to join activities as and when they were ready, allowing for individual differences.

Participation was felt to be influenced by practitioners’ awareness of the needs of individual children and the approaches necessary or being protective.

Practitioners working with children with AN facilitated participation by enabling access. This included: modifying the activity; allowing access to different environments as part of the routine; taking children into MS on a regular basis; moving resources to the child or taking the child to resources and placing resources within reach. They supported and reassured children during new experiences.

“Supporting them to access them and enjoy them and have fun and be safe.” TA3 SP

They also informed other children by answering their questions about the differences they might see and ask about.

“We answer questions as openly and honestly as we need to and usually they take that information on board.” NT1 SP

Some children with AN depended on practitioners facilitating their participation.

“..PMLD in the afternoon - they just couldn’t go outside and participate in an activity, because they’re relying on an adult to get to the activity and to take part with other children.” TA2 SP

4.3.4 Mediation

Table 4.6: Themes identified for Mediation

| | Practice | Learning and Cognitive Development | Participation |
|--------------------------|---|---|--|
| <i>Common</i> | Tools and artefacts Planning | Tools and artefacts Model Encourage Peer mediation Language Teaching | Encourage Prompt Access Wellbeing |
| <i>Comparison</i> | Tools and artefacts: EYFS, IEPS, Reports | Language and communication Resources Encourage Active intervention Repetition Approach | Peer mediation Model and encourage |

4.3.4.1 Practice

Common Themes

Practices in the setting were mediated by shared planning including formal planning recorded on a planning sheet, planning board or overview sheet.

“All of the continuous provision is planned based on what we think the children would naturally want to do in those areas.” NT1 MS

“We also record achievement onto the overview sheet that we have on the wall. Which we then use to inform the planning for the next week or even the next day if they’ve had an experience that we think would be worthwhile repeating and that can be our prompt for the next day.” NT1 SP

Comparison

Documents such as the EYFS were used to provide information about typical development to inform practice and planning for children with AN. Documents, including the IEP and reports from outside agencies informed support for individual children.

“We do follow pathways and record it with the EYFS documents which give us the guidance of what children should be attaining at certain age groups.” TA1 SP

“We would always be looking at children's Individual Education Plans and the targets, the three targets they’ve been set for a given period.” NT2 SP

“...observing the children, talking to the parents and reading their medical history, but mainly by observing the children you sort of come up with an understanding about what level development they may be at.” TA4 SP

4.3.4.2 Learning and Cognitive Development

Common Themes

Practitioners used a range of approaches and techniques to mediate learning and cognitive development:

- Tools and artefacts: books, photographs.
- Modelling: doing the activity with the child or playing alongside and showing them.
- Encouraging.
- Peer mediation: asking a child to show other children what they had done or the way they solved problems.

- Teaching specific skills and how to use tools.
- Language and communication approaches.

“I sat down with him and we did a lot of work on filling and pouring, filling and emptying, different sized containers, sieves and water wheels and watching how water can be used. How can it be transported and transferred to different areasI was showing him what we could do with the containers.” TA2 SP

“...asking other children in the same group, saying, ‘do you think you could help so and so? How do you think you could help? Could you show them what to do? So they’re learning from each other.”TA1 MS

“So, questioning and developing language are two very big tools that we use.” NT2 MS

Practitioners emphasised the significance of language as a mediator of learning and cognitive development, including introducing new language and using questions to develop language. They described language as one of the tools they give to children.

“I think the children here need a lot of language given to them so one of our tools we are very conscious of the language we are introducing to the children.” NT1 MS

“But language is the common area of development throughout and for many of our children whose language development is delayed, significantly delayed, the language development can hinder their learning and development in all other areas.” NT2 SP

Comparison

Practitioners working with children without AN used questions to elicit thinking and introduced language for thinking and problem-solving to mediate learning and cognitive development.

“Questioning: it’s a skill of trying to question without leading isn’t it really?” TA1 MS

“It is about involving the children in that process, so remembering to ask them questions and trying things out and saying to them, even though I might know the answer to something.” NT1 MS

“...a hugely complex thing. ..It’s like, the level of language the ...the development of thought processes, ...extended thinking is a skill that ..they have to learn.” NT2 MS

Practitioners working with children with AN also used language to mediate learning and cognitive development, however, it was used to model new vocabulary, often single words. Alternative forms of communication were also used: PECS, Makaton, single words, gesture and objects of reference.

“If we think a child would benefit from exchanging a photograph and using PECS, sort of, ultimately, then we would just start by encouraging them to exchange one photograph or maybe even just start by showing them photographs of what we’re doing so that they’re aware that a photograph can show them something and then that they can use a photograph to request something and then extending it so that they’re making a choice between two photographs so that’s the kind of progress with communication.” NT1SP

Practitioners working with children without AN introduced tools and artefacts (books, checklists, photographs and ICT) that enabled children to explore their interests and develop their knowledge and understanding to mediate cognitive development.

“It’s looking back at an activity that they’re doing again. That they might have done several weeks before and if we have any photographs or I’ve an observation of it.” NT2MS

“I went to the library and got lots of books on castles and we had a look at how castles were really built.” NT1MS

“Knowing where to lead that child to find out more: look in a book, let’s go and use the computer.” NT2MS

They also introduced people from the wider community to share their knowledge.

“...bringing in visitors... Firemen in with the Fire Engine... Paramedics in to share their knowledge... Pizza Hut to come and show the children how to make pizza.” NT1MS

Practitioners working with children with AN introduced tools and artefacts to extend play, model new possibilities, for example, different ways to explore water. This included using visual timetables and objects of reference.

Practitioners encouraged children without AN to become autonomous learners: solving problems and working things out for themselves. They guided learning by making suggestions rather than telling them, showing them or doing the activity for them. This included providing particular resources.

“We sort of would suggest things... It gave her the chance to think about, well would they be able to get in or would I have to add anything else to stop that happening.” TA1MS

“...it’s not about setting up a fire station it’s about subtly providing those resources or subtly pointing them in the direction of those resources that might take that learning on.” NT1MS

Practitioners working with children with AN referred to other forms of mediation used to support learning and cognitive development:

- Encourage by using praise and tangible rewards. Rewards were contingent on specific actions and were specific to the child.
- Model what else the child could do. This included exploring in play, language, actions, use of tools. Practitioners emphasised the significance of modelling to mediate learning and cognitive development.

- Use of cues and prompts to elicit responses, including sensory cues such as sounds associated with the routine.
- Repetition. Practitioners felt children learned when the activity was repeated regularly and support withdrawn over time so that the child could do it independently.
- Hand over hand support was used to help the child experience something new.

They felt children with AN needed a calm, relaxed approach with the adult doing the activity with or alongside them at their pace, responding to their needs and adapting the activity as necessary.

“So if they’re building or using clay or Playdough, then you’re encouraging the basic exploration but perhaps then modelling for them what might be next.” NT1 SP

“I think you have to use a lot of adult modelling, you know, showing them what you can do, using hand over hand, exploring, and you can use it in ways that interest them.” TA2 SP

“Lots of praise and encouragement you need to give and to reinforce that you know you’re happy with what they’ve achieved. So they’ve got the confidence then to repeat it.” TA3 SP

“We repeated that activity. Not necessarily just using paint, but we had things like shaving foam and gloop, making the same sort of patterns, using the same sort of language but with a slightly different material and texture and eventually, he began to explore in his way, the materials.” NT2 SP

The findings suggested qualitative and quantitative differences in the mediation provided.

Common mediational means were used: particularly language and use of tools and artefacts, however, they were introduced in different ways to develop thinking and problem-solving for children without AN and to develop play and communication skills for children with AN.

They might indicate that some forms of mediation are on a continuum.

4.3.4.3 Participation

Common Themes

Practitioners mediated participation by:

- Encouraging joint play and sharing of activities and resources.
- Prompting to involve children in play.
- Ensuring children can access activities by adapting activities, resources, positioning and environments.
- Helping the child to feel happy and secure.

“Encourage them perhaps, you know, to be sharing things or giving him things.”
NT1MS

“It’s perhaps positioning of chairs, or positioning of tables, or positioning of how you sit or the environment or ...” ANTA2MS

“...putting things near children, placing resources within reach....taking them out of the chairs and having them on an adult’s knee or actually in the water. Dependent on their physical need, we may move resources to the children or move the children to resources.” NT2SP

“Make sure it’s accessible for everybody and again introduce as much fun and play be it through sound, gesture, facial movements, anything to get an interaction with a child.” TA1SP

Comparison

Practitioners working with children without AN encouraged peer mediation: encouraging a child without AN to involve children with AN in their play and support that child.

“And try and help them, help those children to include that child in their play and to acknowledge even if the child’s working alongside which obviously most of the time the child will be.” NT1MS

Practitioners working with children with AN mediated participation by modelling, encouraging sharing and using social language. They also created social experiences for the children.

“I suppose if I’m playing a game with a child, say, say I’m sending a car back and to or a ball and there’s another child there and I might say to the other child, would you like to come and play.” TA4 SP

“We encourage the children to share experiences with those who’ve got more significant needs.” NT1 SP

“In relation to sensory and exploratory, we do quite a lot of cooking and baking activities which again encourage their turn-taking skills, their social experience of being part of a group.” NT1 SP

4.3.5 Outcome

Table 4.7: Themes identified for Outcome

| | Practice | Learning and Cognitive Development |
|--------------------------|--|---|
| <i>Common</i> | Affective response Progress | Progression |
| <i>Comparison</i> | Engagement in planning activities Development | Independence Affective response |

4.3.5.1 Practice

Common Themes

Practitioners identified children’s positive affect and progression as outcomes for sessions.

For some children, this might be evident from their non-verbal communication.

“The child could perhaps give you eye contact or smile or perhaps clap their hands if they’re happy with what they’ve done.” ANTA2 MS

“If the children are happy and settled and appear to enjoy the session.” TA1 SP

“If a child has achieved something for them which is really significant.” NT2 SP

“You can see the progression by looking at, you know if you’ve done observations.” TA1 MS

Comparison

Practitioners identified children without AN’s active engagement with planning their activity for the next session as a positive outcome from sessions.

“So it’s kind of that excitement at the end of the day. The children ... talking about what they want to do the next day.” NT1 MS

“When we leave and there's lots of questions still to be answered and they’re looking, look forward to next bit.” NT2 MS

Practitioners working with children with AN focused on progress: developing skills and becoming independent as outcomes for sessions.

“Something’s happened in the session for example, with a child, when he was first trying to access the slide and I was helping him up the stairs and like one day he just did it by himself and he walked up.” TA4 SP

4.3.5.2 Learning and Cognitive Development

Common Themes

Children’s independence with activities or transferring learning to new situations or achieving a task were regarded as positive outcomes for learning and cognitive development.

“When the child actually achieves either some of what you are asking them to do or actually does the whole activity in a way that’s a good conclusion.” SNTA2MS

“We’ve seen them applying what they’ve learnt in new situations.” NT2MS

Comparison

This was evident from children with AN choosing an activity or spontaneously repeating it or when they when appeared happy, calmer and less reluctant.

“Maybe if he is independently starting to count things.” SNTA1MS

“Their manner is calmer towards an experience than it previously was.” NT1SP

“For the child (to be) willing to actually spontaneously go to that activity themselves and to be able to find their own tools and to be able to just take part without needing any adult support.” TA2SP

4.3.6 Future Developments

Practitioners' priorities for developing pedagogy and practice were:

Table 4.8: Themes relating to Future Developments for Pedagogy and Practice

| Themes | Shared Views |
|---------------|---|
| Pedagogy | Valuing the pedagogy and provision whilst recognising the need to reflect, review and develop practice. |
| Inclusion | Planned inclusive activities Increasing access between rooms and to activities across the setting. Finding a shared focus that all children could work on. Identifying learner needs that are common to all. |
| Practitioners | Team - all knowledgeable about and aware of individual children's abilities and needs, sharing information, working across the setting including more joint working. Shared training including on special needs. |
| Environment | Forest School |

Practitioners valued the pedagogy and practice in the nursery but felt it was important to reflect, review and develop practice.

They seemed committed to developing participation by increasing inclusion and inclusive practices. This included finding activities that children could share based on their learning needs, rather identified needs or diagnoses. They valued sharing knowledge and understanding of individual children's strengths and needs.

They seemed keen to use the Forest School, developed on site, to provide a different learning environment that children with different needs could access in their own way from enjoying the sensory experiences it afforded to investigating with the resources available.

4.4 Interpersonal Plane

4.4.1 Introduction

Findings from the observations of MLEs will be presented to describe the pedagogy within the interpersonal plane. Six themes were identified from the data: activity, adult role, child role, mediation, situation definition and outcome in terms of potential learning and cognitive development.

The findings will be described as common themes relating to all or most of the MLEs and as a comparison between these themes for MLEs with children without AN and children with AN. Vignettes from the observations will be included to exemplify the findings where appropriate.

Rogoff (1995) suggested that the interpersonal plane could be characterised as including direct interaction, roles and structures, cultural activities, communication, collaboration, routines, goals. It was felt some of these characteristics might apply to MLE, as described by Feuerstein (cited by Kozulin, 1998) and might be consistent with the themes identified, suggesting that the findings might describe the pedagogy within the interpersonal plane. The MLEs observed were consistent with the definition of a MLE provided by Feuerstein. Information about the MLEs observed is provided in the table below, followed by a summary of the main findings.

Table 4.9: Characteristics of MLEs Observed

| Summary of Activity | Child | Practitioner | Setting |
|---|--|--------------|---------|
| Transforming a box into a house: Development from drawing pictures of house. Practitioner and child looked at a photograph of child's house and talked about features. Practitioner introduced the activity. Child chose a box. Practitioner and child identified features of house (outside). Practitioner assisted child to cut out windows. Practitioner offered child a choice of masking tape or sticky tape to make the glass. Child chose masking tape. Practitioner allowed child to proceed and encourage child to 'test' efficacy of materials. Supported child to realise needed to use sticky tape. Child continued activity then moved on to filling box with wooden blocks to make seats and sitting on blocks in house. | Girl No identified needs | NT1 | MS |
| Sharing books: Practitioner read 'The Three Little Pigs' to child. She asked questions about the story and encouraged the child to predict and join in with repeated phrases. At the end, the Practitioner suggested that they could make their own book. The child introduced other books for the practitioner to read. The child commented on letters and sounds in words and this prompted further discussion. The child made links between the story and her experiences at home, for example, knowing that a rabbit eats carrots. | Girl No identified needs | TA1 | MS |
| Board game: The practitioner set up the game and prompted and guided the child to take turns, count the dots on the die, find the number corresponding to this on a number line and move the appropriate number of spaces on the board. The practitioner prompted and guided each turn; the child did more of the actions himself over time: finding the number on the number line and moving the correct number of spaces. The child needed frequent prompts to carry out the sequences of actions involved. | Boy Identified AN: SLCN, learning needs, social needs | TA2 | MS |
| Play in water and blocks: The practitioner encouraged the child to notice stars in the water, take them out and group them together. She then encouraged the child to explore filling and pouring, including pouring water on a toy waterwheel. The child moved to the blocks and the practitioner encouraged him to explore them. Initially he moved them around and the practitioner joined in acting as if the blocks were trains. She encouraged the child to group the blocks by colour and to build a tower. The child engaged briefly with the different actions then signalled he was ready to move on. | Boy Identified AN: SLCN, learning needs, medical needs | NT2 | SP |
| Exploring silver balls: bounce and throw silver balls. Practitioner modelled action and encouraged child to indicate 'more' and 'go' non-verbally using gesture. Practitioner encouraged child to retrieve ball: extending frame of reference. Practitioner introduced sensory toys (tinsel, silver balls etc.) for child to explore. Child continued to play with ball. Practitioner introduced guttering and supported the child to put the ball on the guttering, watch it go down, retrieve it and repeat. Practitioner supported child to repeat actions. | Boy Identified AN: SLCN, learning needs, physical needs, VI, moves on knees | TA3 | SP |
| Exploring oats: dry and wet; making a picture. The child accessed the activity in his wheelchair. The practitioner introduced the dry oats by putting them on a black tray and prompting (hand over hand) the child to touch them. She picked up a handful and held them above the child's head so that he would notice, then released them. She prompted him to spontaneously put his hands in the oats. She introduced wet oats and encouraged and supported the child to explore them giving hand over hand support. She introduced new experiences in a way that was meaningful to the child: helping him to notice and respond to presence/absence of stimuli in his visual field or through touch. The practitioner introduced paper and glue and assisted the child to explore these: scrunching the paper and touching the glue, then to explore this further with oats to make a picture. Child needed significant mediation to voluntarily control actions and responses. | Boy Identified AN: Physical needs, learning needs, SLCN, VI. | TA4 | SP |

Table 4.10 Main Findings from the Observations of MLEs between Practitioners and Children

| | COMMON | COMPARISON | |
|---|--|--|--|
| Theme | All | Children without AN | Children with AN |
| Activity | Adult initiated Interaction Open-ended Goal directed Culturally significant | Skills Interaction Cultural significance | Interaction Cultural significance |
| Adult Role | Organise activity Mediate learning Adapt activity Model language Make activity significant/meaningful to the child | Guide learning Develop skills Encourage scientific approach Follow child's lead Facilitate autonomy | Lead learning Develop communication Focus attention Social skills Feedback Develop goal directed actions |
| Mediation | Language Model Positive feedback Encourage Hand over hand guidance | Questions to develop thinking and reasoning Artefacts Use of tools 'clever' | Verbal prompts Ready, steady...go prompt Model Hand over hand Purpose 'good' |
| Child's Response | Joint attention Reciprocal responses Turn-taking | Apply knowledge and understanding Share activity Autonomy Verbal reasoning Actions | Goal directed actions Sequence of actions Actions on objects |
| Situation Definition | Changes | Relinquish in favour of adult's; | Accept adult's definition briefly |
| Learning and Cognitive Development | Skills Scientific approach Language and communication Affective response Social | Higher psychological functions Mathematics Scientific Problem-solving Literacy skills Language for thinking and reasoning | Mathematical Cognitive functions: attention, perception, memory Goal directed actions Systematic approach Sensory responses Explore Social Communication skills |

4.4.2 Activity Characteristics

Common Themes

The activities were planned to extend and develop prior learning and experience from previous activities. The practitioners initiated the activities and involved the children. The child participated in ways that were meaningful to them.

Practitioners initiated the pedagogical interaction by introducing an object (e.g. box, book, number line, star, ball, oats) and making this meaningful or significant to the child.

Most activities were open-ended with the exception of the board game. They could develop in different ways according to the interest or developmental needs of the child or adult's definition. They involved a range of skills and abilities associated with cognitive development as well as language, communication and social development. The activities were goal directed: they worked towards an outcome in most instances identified by the practitioner.

The practitioner led the activity and the child followed. At some point during the activity, the child introduced actions or activities that might be meaningful to them, suggesting that they defined the situation differently.

The activities were culturally significant: the learning involved was relevant to cultural expectations for play and learning. For children without AN, this focused on developing curriculum skills. For children with AN this seemed to focus on developing conventional play and meaningful actions on objects.

Comparison

The MLEs with children without AN provided opportunities to develop literacy and numeracy skills and higher psychological functions, such as problem-solving, inference, and estimation. Children used language to think and reason and solve problems in play.

The activity was shared with the practitioner: they did it together and seemed to co-construct how it might develop. There were conversations and reciprocal interactions to negotiate the activity and support learning. Children contributed to the learning activity.

The focus of the activity was culturally significant: it represented something important about the culture, for example, that language and stories could be represented in books and conventional representations of houses. Links were made to the child's prior experiences: the NT and child looked at a photograph of the child's house and the TA and child made connections between the story and experiences at home.

Activities for children with AN were based around sensory play and exploring actions on objects. They provided opportunities to develop goal directed actions and lower psychological functions such as perception and attention. The activity for the child with AN in MS was a game with rules, however, the focus was on developing number recognition and counting, rather than the higher order skills observed during the MLE with children without AN.

The activities were adult-directed: practitioners prompted and developed the child's responses in more conventional or systematic ways. They used Makaton, gesture, single words and short phrases to communicate.

The activities seemed culturally significant in that they developed exploration into more purposeful responses towards a conventional outcome such as moving a counter on a board, building a tower with blocks, putting a ball on guttering or making a picture with oats.

4.4.3 Adult Role

Common Themes

Practitioners set up and organised the activities. They signalled the start and end to the child and involved them by making the activity significant and meaningful to the individual child.

Practitioners used a range of mediational means. These were differentiated for the individual child. They seemed sensitive to the child's responses and adapted the direction of the activity accordingly. There were opportunities for the child to lead the learning.

Practitioners modelled language and communication approaches associated with the activity. This seemed to be a significant aspect of their role. It included introducing new vocabulary, modelling vocabulary associated with objects and actions and explaining or narrating what was happening.

Practitioners made links to prior experience or existing knowledge explicit. They endeavoured to make the activity fun and enjoyable whilst making it distinct from what was happening around the pedagogical interaction.

Comparison

Practitioners co-constructed and guided the learning and responses of children without AN.

Although they introduced the focus of the activity, they allowed it to develop through negotiation with the child. The definition of the activity seemed to move fluidly between the practitioner and the child.

The practitioners guided the child and provided support to develop skills associated with the activity. They encouraged and supported thinking and reasoning, particularly verbal reasoning, using spoken language to solve problems, plan and express ideas. They encouraged the child to adopt a 'scientific approach' using evidence to reach conclusions, making predictions and formulating and testing hypotheses. For example, the NT encouraged the child to predict and test whether she could see through the masking tape used for the windows.

The practitioners assisted the child to realise what she wanted to do, following the child's lead. For example, the child making a house from a box indicated at the outset that she was interested in the interior, saying, "We could put seats in." She returned to this after making windows in the box with the practitioner. The practitioner allowed this shift in situation definition and assisted the child to realise what she wanted to do: fill the box with blocks.

The practitioner used this as an opportunity to develop mathematical thinking, re-defining the situation again.

**Excerpt 4.1: From observation of MLE between NT1 and child without AN:
Making a house from a box.**

NT1: "What are the blocks for?"

Child: "The seats."

NT1: "How many more (blocks) do you think?"

Child: "I need that."

NT1: "Nearly full now. How many more? How many are you going to need?"

Child: "Two more"

NT1: "Get two. Let's see if you are right."

The practitioners seemed to enable children without AN to develop autonomy as a learner, encouraging them to make choices, decisions and lead learning.

Practitioners intervened to direct and support the learning and responses of children with AN. They provided direct intervention to mediate the learning by making the objects, actions and the activity significant to the child, helping them to discriminate objects and actions from the context, for example, and noticing stars in the water:

**Excerpt 4.2: From observation of MLE between NT2 and child with AN:
Exploring water.**

NT2: "What can you see?" Moves the bowl towards the child.

NT2: "Can you see stars (Makaton sign)?"

Child: Looks towards stars.

They assisted children to use their senses to notice and respond and to focus their attention. They supported children to maintain joint attention and involvement in the activity. They provided feedback contingent on the child's responses to encourage and develop this. They

enabled the child to develop goal directed action and to become more systematic in their exploration. They developed reciprocal responses and turn-taking.

Practitioners assisted children with AN to indicate and communicate choice and make this meaningful for them.

**Excerpt 4.3: From observation of MLE between TA3 and child with AN:
Exploring silver balls.**

TA3: Models bouncing silver ball. “Ready, Steady...Go.”
Child: Vocalises
TA3: “Do you want more?”
Child: Vocalises and reaches towards silver ball.
TA3: “What do we do for more?”
Child: Knocks with hand.

They seemed to support children with AN to develop lower psychological functions, such as perception and attention as well as social and communication skills.

4.4.4 Mediation

Common Themes

Practitioners used a range of tools, artefacts, prompts and approaches to mediate learning.

Shared mediational means included using language as questions or verbal prompts to elicit responses or specific actions, modelling, encouraging, providing positive feedback and praise and giving hand over hand support to teach new actions or skills.

Comparison

Practitioners working with children without AN mostly used spoken language and verbal mediation. This included asking open-ended questions to elicit thinking and reasoning, talking

about the activity and the child's actions together, sharing knowledge and making suggestions.

Excerpt 4.4: From observation of MLE between TA1 and child without AN: reading books.

Child: "Rabbits like carrots."

TA1: "How do you know?"

Child says that her rabbit at home eats carrots.

TA1: "Does he like carrots, does he?" Tells the child how rabbits eat with their sharp teeth.

Practitioners also prompted the child to make links to prior experience, for example, when the book was read before or when the child drew a picture of her house. They enabled the child to transfer knowledge and skills by making these links explicit.

Verbal mediation was also used to make the activity meaningful to the child by enabling her to make links between the book and familiar experiences at home or helping her to think about who the house might be for. This might help the child to develop an internal representation of the activity.

Artefacts were used to support and enhance the activity, for example, photographs of houses.

Hand over hand support was occasionally used to help the child to use tools such as scissors to cut out the windows on the box. This was withdrawn as the child became more competent.

Children were praised and their actions affirmed. Children without AN were praised for being clever.

There were qualitative and quantitative differences between the mediational means used with children without AN and those used during MLEs with children with AN. Practitioners used mediational means more frequently, intensively and in different ways during the MLEs with children with AN.

Spoken language was used to narrate the activity and the child's actions and to prompt specific actions and responses.

**Excerpt 4.5: From observation of MLE between TA2 and child with AN:
Board game**

TA2: Offer child number line "Find number three."

Child: points to random number.

TA2: model point to three.

Child: look at

TA2: "Move penguin three spaces."

Child: moves penguin.

A 'ready, steady, go' prompt was frequently used to focus attention, encourage the child to anticipate and to elicit a communicative response.

**Excerpt 4.6: From observation of MLE between TA3 and child with AN:
exploring silver balls.**

TA3: "on the top" prompt to put ball on.

Child: puts ball on guttering. It rolls into the basket.

TA3: "In the basket. Going to do more?" Lifts ball towards guttering.

TA3: "Put on. Ready, steady..." waits. Holds ball at the top.

Child: reaches towards.

TA3: "Go!" releases the ball so that it rolls down the guttering.

Practitioners used questions to focus attention and help the child to notice something different, rather than to elicit a spoken response.

Excerpt 4.7: From observation of MLE between TA4 and child with AN: Exploring oats.

TA4 introduces dry oats onto tray in front of child.
TA4: Sprinkles oats high. Holds up high in front of child and releases.
TA4: "Can you find it?"
Child: Turns towards.

Practitioners maintained a narrative describing what they were doing, what the child was doing and what was happening. They modelled actions on objects or new actions, for example, pouring water onto a toy water wheel, and encouraged and supported the child to imitate the action then prompted the child to repeat the action.

Practitioners frequently used hand over hand support to guide the child through actions or so that the child could experience the effect of their actions.

Frequent verbal, gestural and physical prompts were given to focus attention, prompt involvement and responses. Mediation behaviours were often combined to prompt actions, communication and responses, for example, verbal prompt, model and hand over hand support.

Excerpt 4.8: From observation of MLE between NT2 and child with AN: Exploring water.

NT2 introduces toy waterwheel, holds up so child can see.
NT2: "What's this?"
Child: vocalises, smiles and makes eye contact.
NT2: "What's this?"
Child: explores waterwheel: moves parts.
NT2: "Ready, steady...go" pours water on.
Child: touches wheel.
NT2: "Do some more (sign)?"
Child: vocalises.
NT2: "You want to pour?" Hand over hand to pour. "Ready, steady....go." helps child pour.
Child: Look at what doing and what happens.

Mediation was used to focus and maintain attention on the significant aspect of the activity: the texture of oats, objects in a basket, stars in water and numbers on a number line to help the child to notice relevant information to help form meaningful associations.

Mediation was also used to regulate behaviour: letting the child know what were appropriate and inappropriate responses in the social context.

Mediation was used to refocus and reengage the child with the leading activity. Children with AN seemed to need frequent prompts to help them maintain involvement with the adult-led activity in order to experience the outcome or result of their actions on objects.

4.4.5 Child's Response

Common Themes

The effect of the mediational means used was observed in the child's response.

Mediation enabled the practitioner and child to shared joint attention to varying degrees depending on the activity and needs of the child. Children often responded to the questions and prompts given. Children without AN made verbal responses and children with AN responded non-verbally (vocalisation, sign, gesture, action).

Reciprocal responses and turn-taking developed during the pedagogical interactions. Turn-taking conversations were a significant part of the interactions between practitioners and children without AN. Children with AN made reciprocal responses: focusing attention and taking turns when prompted

Comparison

Children without AN demonstrated that they could apply their knowledge and understanding to the activity. They were able to solve problems, talk about what they were doing and seemed motivated to share their activity with the adult. They seemed to be autonomous learners. Their actions appeared purposeful and goal-directed. They could make choices and communicate these to the adult. There was evidence of verbal reasoning: describing what they were doing, planning and giving reasons for actions.

The children spontaneously investigated objects and resources and pursued ideas for play within the activity. They collaborated with others: the adult and other children. They seemed immersed and involved in the activity. They seemed aware of the social norms and conventions in nursery.

Children with AN demonstrated exploration and investigation in play. This seemed motivated by sensory feedback. They needed significantly more input, guidance and mediation to make responses indicative of learning and development. They tended to share the adult's activity briefly then resume exploration in play. They needed significant mediation to show goal-directed actions on objects and conventional play. Their responses tended to be cued and prompted.

4.4.6 Situation Definition

Common Themes

The focus for the activity seemed to change during the MLE. The practitioner introduced the activity, defining the situation and the child seemed to share this initially. This seemed to be negotiated with the child.

Comparison

Children without AN could relinquish their situation definition (e.g. making the interior of a house from a box) for the practitioner's definition (e.g. making the exterior of a house). They could follow the adult's lead and were able to introduce their own situation definition appropriately at a later point in the MLE. This provided the context for mediating learning in the direction planned by the practitioner and according to the interests of the child.

Children with AN needed significant prompting and intervention using a range of mediational means in order to relinquish their situation definition (e.g. exploring in play) in favour of the practitioner's (e.g. goal-directed actions, cause and effect). A range of mediational means were used to establish joint attention and a shared situation definition so that the child and the practitioner were acting on the object in the same way or for the same outcome. Children with AN seemed to move between their situation definition and the practitioner's, creating brief opportunities for mediating learning. They interacted with objects and their immediate environment in ways that might be meaningful to them and they needed significant mediation to share meaning and consequently develop conventional actions in play.

4.4.7 Learning and Cognitive Development

Common Themes

The child's responses and the mediation observed indicated potential learning and cognitive development. It was beyond the scope of the study to confirm this.

Children appeared to develop relevant cognitive skills, for example, using tools (scissors), noticing rhyming words, recognising numbers, putting balls on guttering and noticing similarity and difference. The pedagogical interactions also provided the context for developing social and communication skills, particularly for children with AN.

Children were encouraged to investigate and adopt a 'scientific approach' observing the effect of their actions and noticing what happened.

There were opportunities to develop language and communication. New vocabulary (words and Makaton signs) was modelled by the adults.

Comparison

Practitioners enabled children without AN to apply their knowledge and skills to develop higher psychological functions: problem-solving, thinking and reasoning, planning, predicting and inferring. Questions were used to prompt thinking and verbal reasoning. This was evident from questions to elicit inference and prediction whilst sharing books and encouraging the child to 'test' the transparency of windows made from masking tape.

The MLEs observed included opportunities to develop curriculum-based skills: literacy and numeracy. This suggested children without AN could develop skills and abilities that are socially and culturally valued within the education system.

Practitioners supported children with AN to develop attention control, perceptual skills, goal-directed actions and a systematic approach. This suggested that MLEs might develop lower psychological functions or spontaneous responses to develop control of cognitive functions (attention, perception) to help children notice and respond to experiences in a systematic way.

Practitioners also supported children with AN to develop exploratory play towards goal-directed and conventional play. For example, moving from exploring oats to making a picture with them; from moving blocks to building towers and counting. They encouraged children to notice number concepts (counting and recognising numbers) and gradient (slope of guttering). They helped children to become aware of their immediate learning environment and social context, taking turns and interacting with others.

Practitioners also mediated children with AN's affective, social and communicative responses to develop reciprocal interactions as the context for mediating learning.

Language seemed to be the primary mediator of learning and cognitive development for children without AN. Developing social, affective and communicative responses seemed to be significant to learning for children with AN. This suggested that intersubjectivity and shared activity were necessary as the context for mediation of learning and cognitive development as well as development of social, communicative and affective responses.

4.5 Personal Plane

4.5.1 Introduction

The findings from following two children: a girl without AN in MS and a boy with AN in the SP will be outlined to describe the pedagogy within the personal plane. The findings will be presented as themes relating to the child's participation in nursery: routine, context, activity, child role, adult role and interactions. The findings will be described as common themes and as a comparison between themes relating to the experiences of the child without AN and the child with AN.

Rogoff (1995) described characteristics of this plane as: participation, roles, change over time, transformation and dynamic. It was felt that the themes identified could be related to these characteristics, however, it was not possible to capture change over time and transformations from the limited observations made. This could be a focus for a longitudinal study.

Table 4.11: Main Findings from the Following of Two Children

| | COMMON | COMPARISON | |
|---------------------|---|---|--|
| Themes | Both | Child without AN | Child with AN |
| Routine | Child-led play Group activities Adult-led activities Access | Independence Adult directed group Social routines Access snack independently | Supported Balance adult-led; child-led play Structured routine Timetabled activities Adult directed activities Access snack in group |
| Context | Participation in different learning environments and groups | Mainstream Outdoors Visit to special provision Adult directed group for greeting and at end | Special Provision Multisensory room Adult-directed group for snack and greeting |
| Activity | Range of activities Sensory play | Chosen by child. Revisited construction and role play Shared with others Opportunities to develop higher order psychological skills Adult directed: make a card Problem solving Imaginary play | Support to access Explore and investigate Sensory Revisit musical instruments |
| Child's Role | Choose activities Social learner Active learning | Independent Collaborative learner: with other children and adults Spoken language to communicate | Supported Cooperative learner with adult support Non-verbal communication |
| Adult's Role | Adult-led groups Guide learning Interact with child to mediate learning | Guide to follow routine Mediate learning social | Meet basic needs Access Transitions Transfer between equipment and floor Mediate learning Mediate social interaction Mediate communication |
| Interactions | Reciprocal interactions | Interact with other children and adults | Interact with adult |

4.5.2 Routine

Common Themes

The routine for both children provided opportunities for child-led play, adult-led activities in a group and opportunities to join adult-led activities. Both children accessed different environments. The child without AN elected to go to the SP for part of the session. This was part of the routine.

Comparison

The child without AN followed the routine independently or with minimal prompts from practitioners. She chose activities in nursery and moved around the learning environment freely, seeking permission to go through to the SP appropriately. A 'rolling' snack was offered: it was available as and when the children wanted it. The child accessed this independently. She also chose to participate in adult-led activities, such as listening to a story or making a card. She joined in with social routines, such as tidying up.

The adult-led group activity for the greeting was longer for the child without AN than for the child with AN. It included activities to develop mathematical skills: counting the children, writing a number, putting numbers into sequence and investigating measuring as well as the greeting and talking about the day of the week. There were 12 children in this group. It was led by a NT.

The child with AN had one-to-one support from a TA during the session observed. The practitioner helped him to follow routines, access activities, make choices and move to what

he wanted to do. There seemed to be a balance of adult-led and child-led activities with choices negotiated by establishing shared communication.

The child with AN seemed to have a more structured routine with timetabled activities, including snack. This included an adult-led small group for the greeting, snack in an adult-led small group, play outdoors and a session in the multisensory room. More time was needed for transitions between activities: to move the child in and out of specialist equipment. Most of the child's time in nursery was directed.

The adult-led small group included activities to develop social interaction and communication skills, for example, an activity in which the children took turns to choose a toy from a box and explore it. There were four children in the group with four practitioners supporting, including the NT leading the activities.

4.5.3 Context

Common Themes

Both children participated in a range of contexts: different learning environments and different groups.

Comparison

The child without AN spent most of the session in the MS classroom and outdoor play area with other children. She elected to go through to the SP at the start of the session for a short time.

The child with AN spent most of the session in the SP and environments linked to this, such as the multisensory room. He was supported by the TA throughout the session. He participated in small groups with other children with AN for the greeting and snack.

4.5.4 Activity

Table 4.12: Activities Accessed during the Session Observed

| | Child without AN | Child with AN |
|----------------------------|--|---|
| Activities Observed | MS: Listen to story SP: Flasma Foam Garage Role play/home corner MS: Tidy up Playdough Group time: greeting- adult-directed in group Mathematical activity: adult-directed in group Snack Construction: wooden blocks and figures Adult-led making card Game with rules: Dominoes Construction Trains Role play/home corner Group time: adult-directed in large group story | SP: Snack Investigate doll Foam Musical instruments: keyboard and drum Sensory objects in box. Group time: greeting adult-directed in group. Sensory objects in box adult-directed in group. Painting Exploratory tray Explore environment: independent mobility Throw ball. Musical instruments Snack: adult directed in group. Singing: adult directed in group Multisensory room: multisensory toys. |

Common

Both children accessed a range of activities. They both engaged with sensory play with the foam.

Comparison

The child without AN chose activities in nursery and engaged with them independently. She chose a wide range of activities that presented opportunities to develop a variety of skills and abilities. She revisited the construction area and role play area. She made a castle with blocks for a princess (figure) and role-played being ‘mum’. She seemed to become immersed and involved in her play. She showed imaginative play and solved problems. She shared her play with another child and showed co-operative play, planning and negotiating roles and actions.

Excerpt 4.9: From observation of child without AN playing in the construction area:

The child puts blocks together to make an enclosure.

A NT asks her if she is building a castle.

Child: “yeah.”

Her friend joins her and offers her a block. She allows her friend to help.

She counts the figures (princesses) and tells her friend what to do. She talks about what she needs to have in the building.

The child creates an enclosed space with the blocks: making a floor and walls and puts the figures in. She adds blocks to form a structure.

She puts the figures in and counts the blocks.

She tells her friend how many there are so that the child knows how many to put on the other side to make the structure balanced and symmetrical.

She plays with the figures and acts out stories with them. She relates the figures to each other.

She uses a block (substitution) as a horse and moves it around.

Child: ‘Gallop, gallop.’

The child without AN was invited to make a card: she chose to engage with this activity.

Once the adult had explained the task, she was able to engage with this independently, adding decorations to the card.

The child with AN was supported to choose activities in nursery. The practitioner ensured activities were set up so that he could access them. He made choices non-verbally by reaching towards what he wanted. This could be unspecific and the practitioner needed to interpret what he wanted to do. He could move to his choice of activity when on the floor.

The child engaged in a range of sensory activities that involved exploring and investigating actions on objects. He tended to engage with activities for a short time before indicating that he wanted to change object or activity. The practitioner supported him to engage with these activities and mediated his response.

Excerpt 4.10: From observation of child with AN playing with musical instruments

The child reaches out his hand towards what he wants (drum).

TA: "Is it the big drum?"

Child: makes eye contact and smiles.

TA: "Is it the big drum?"

Child: Knocks.

TA brings the drum to the child.

Child hits the drum with the palm of his hand.

TA: "Woah!"

Child: Reaches towards and looks at what he wants (keyboard).

4.5.5 Child Role

Common

Both children were expected to choose activities in nursery. They both appeared to enjoy being with others and seemed socially motivated. Both children were expected to participate in group activities led by adults. They seemed to learn with and from others. The child without AN mostly learnt with and from other children; the child with additional needs mostly

learnt with and from the practitioner supporting him. Both children seemed to be social learners.

Comparison

The child without AN was expected to access play activities and follow routines independently. She was invited to join adult-led activities. She chose to play and interact with other children. She seemed to be a cooperative learner. She engaged with activities according to her preferences and pursued her own play and learning as well as sharing this with others. She seemed to be an autonomous learner.

The child without AN used spoken language to plan, negotiate and develop her play.

The child with AN had individual support to access activities. Interactions were generally prompted. He investigated and explored in play. He used non-verbal approaches to communicate with the TA supporting him. He could indicate choice. He needed frequent prompts and support to develop his play and to meet his needs. He seemed to be a dependent learner.

4.5.6 Adult Role

Common

Practitioners were available to interact with and support both children. Practitioners provided teaching in adult-led group activities that focused on mathematical skills for the child without AN and developing communication skills and interactions with the child with AN.

Comparison

Practitioners prompted the child without AN about aspects of the routine and she chose to check her actions and activities with practitioners. She also chose to interact with them and involve them in her play by talking about what she was doing. Practitioners provided support in the form of suggestions when invited to join her activity.

The practitioner working with the child with AN had a range of roles specifically to support the child. This included: ensuring his basic needs were met, supporting and enabling him to access a variety of activities; assisting him to indicate his choice of activity; and supporting transitions between activities. More specific support was associated with the child's physical needs, including transferring him between specialist equipment (standing frame and wheelchair) and onto the floor, helping him to use specialist equipment, checking he was comfortable. The practitioner shared activities with the child, mediating learning, social interaction and communication.

Practitioners mediated learning by:

Table 4.13 Mediational Means used by Practitioners

| Child without AN | Child with AN |
|--|---|
| <ul style="list-style-type: none"> • Asking questions to prompt thinking. • Prompting the child to follow the routine: telling her “Tidying up now.” • Modelling solutions. • Instructing. • Giving positive feedback and praise. • Using verbal and gestural prompts to help the child write numbers. | <ul style="list-style-type: none"> • Using verbal prompts to use a specific communication strategy. • Questions to elicit responses. • Modelling actions and communication strategies, including Makaton signs. • Modelling play. • Telling him what was happening next; maintain a narrative about what was and would be happening. • Praising actions and responses. • Prompting interactions. • Instructing. • Using ‘Ready, steady....go’ prompts to elicit responses. • Making actions meaningful and significant by responding to what the child does. • Offering choices. |

Most interactions between the adult and child with AN seemed to mediate the child’s response or develop actions. The adult mostly modelled actions alongside the child and used verbal prompts to encourage the child to engage with activities in conventional ways, for example, hitting a drum, exploring paint.

Excerpt 4.11: From observation of child with AN painting:

TA models action using tool (paint roller) to make marks on paper with paint.

TA: “Pop, pop, pop”

Child: “Oh.” Puts paint roller to mouth.

TA brings brush and paint.

Child puts brush in mouth. Puts brush in pot.

TA: “On the paper” and models making marks on paper with the brush.

Child: “Oh.”

Child puts brush to paper.

TA models action, dabbing with brush.

“Pop, pop, pop.”

In this excerpt, the practitioner modelled actions, putting paint on paper with tools (roller and brush); she prompted the child to notice, join in and engage with the activity in conventional ways (brush on paper). She used sounds (“pop”) to make her actions significant to the child so that he would notice what she was doing.

The practitioner seemed to have a significant role supporting the child’s play and learning, ensuring his basic needs were met and that he could access and engage in a range of activities either with her or in small groups.

4.5.7 Interactions

Common

Both children interacted with others and seemed motivated to be with others. The child with AN frequently looked to the practitioner for her response to his actions. He seemed to respond reciprocally.

Comparison

Most of the child without AN’s interactions were with other children to share and negotiate play and to converse with them in social situations.

Excerpt 4.12: From observation of child without AN during snack.

Child talks to other children (N = 5) sitting at the table. She makes a general comment about the cake on the side.

A child talks to her. They talk about liking Peppa Pig. Another child joins the conversation.

The child tells her friend about her holiday.

The child talks about the cake and says there are no pieces left (on the plate on the table). She tells the adult nearby.

The child seemed to interact with others for social purposes: to establish connections, reinforce friendships through shared experiences and likes and to share information. She seemed to understand the social conventions associated with these interactions and the relative roles of children and adults. She shared socioculturally valued interests.

The child with AN mostly interacted with the practitioner supporting him. Few interactions were observed between the child and other children in the group. These tended to be non-verbal: making eye contact and social smile. The child initiated interactions with the practitioner and sought her response to his actions. Reciprocal interactions developed. These were scaffolded by the adult.

Excerpt 4.13: From observation of child with AN during exploratory play.

The TA speaks to the child.

Child turns to look.

TA models action: bouncing a ball.

Child looks at and approaches. Makes eye contact with the adult and giggles.

Child throws the ball with two hands.

TA lifts and drops the ball.

TA: "Ready... steady..."

Child looks towards.

TA: "Go." She drops the ball.

Child approaches the ball picks it up, throws and waits.

Child reaches towards the adult to gain her attention.

TA: "Where's it gone?" TA gets the ball.

Child bounces on knees.

In this interaction, the child seemed to respond reciprocally to the practitioner and initiate interaction non-verbally. The practitioner mediated this using questions and prompts.

4.6 Conclusion

The findings suggested that the pedagogy in nursery could be described at three levels corresponding to Rogoff's (1995) Three Planes of Analysis. The pedagogy within the community plane could be described as associated with everyday practice in typical sessions, practitioners' values that informed the practice and pedagogy, the role of adults, mediation and outcomes in relation to practice, learning and cognitive development and participation. The findings suggested some common features of the pedagogy for all children attending the nursery and the ways in which the pedagogy might be differentiated to meet the needs and interests of children with and without AN.

The findings suggested that the pedagogy within the interpersonal plane could be described with reference to MLEs as involving activity, adult role, mediation, the child's response to the mediation, situation definition and learning and cognitive development arising from the pedagogical interaction. The findings indicated qualitative differences between the mediational means and style for children with and without AN. Language seemed to be a significant mediator of learning for all children, however, this was differentiated to respond to the needs of individual children.

The findings suggested that the pedagogy within the personal plane might be associated with routines, context, activities, the child's role, the adult's role and interactions. These factors might facilitate or impede the child's participation. There were qualitative differences in the experiences of the two children, particularly in terms of the degree of autonomy as a learner and opportunities for social interaction with other children.

The role of adults and mediation seemed to be common themes, as expected given the focus of the research.

The findings will be discussed further and an interpretation offered in the following chapter.

CHAPTER 5

DISCUSSION OF FINDINGS

5.1 Introduction

This section will discuss the findings in relation to the conceptual frameworks that informed the research and research questions. It will consider possible rival explanations, as suggested by Yin (2009). It will consider and critique methodological issues identified from the research and suggest areas for development.

The research focused on the pedagogy in a maintained nursery with provision for children with severe and complex additional needs (AN). This provided an opportunity to investigate the pedagogy across the setting in relation to the mediation of learning and cognitive development and inclusion in terms of participation of all children attending the nursery.

The research adopted a sociocultural approach, applying conceptual frameworks developed from Vygotsky's (1978) theory to inform and develop research questions, data collection and data analysis in order to undertake a coherent investigation of the pedagogy in relation to child development, as it is understood according to Vygotsky's (1978) principles. Vygotsky emphasised the importance of the sociocultural context for learning and cognitive development.

An important proposal by Vygotsky (1978) and developed by Wertsch (1991) and Kozulin (1998) was mediation of learning and cognitive development by psychological tools, material

tools and artefacts. The discussion will focus on evidence from the findings to suggest how the pedagogy and practitioners might mediate cognitive development and participation.

Rogoff's (1995, 2003) Three Planes of Analysis was adopted as a unifying conceptual framework to guide the research. Rogoff proposed that child development could be studied by applying lenses at three planes corresponding to community, interpersonal and personal in order to elucidate the complex, interrelated processes involved. Fler (2003) suggested that lenses at the Three Planes of Analysis could be applied to investigate pedagogy.

It was suggested that the pedagogy within the community plane might be evident from practitioners constructs about the learning and cognitive development and participation of children in their care. Mediated Learning Experiences (MLE), a particular form of pedagogical interaction in which the adult intervenes between the child and the object (Feuerstein, cited by Kozulin, 1998) to support learning and development, were observed to collect information about the pedagogy and mediation of cognitive development within the interpersonal plane. It was suggested that MLEs might be similar to Sustained Shared Thinking (SST), a feature of pedagogy in effective settings (Sylva et al., 2004). A child without AN and a child with AN were observed to investigate mediation of participation within the personal plane.

Themes relating to the pedagogy within each plane were identified from the findings:

Table 5.1 Relationship between Plane, Focus and Themes

| Plane | Focus | Themes |
|---------------|---|---|
| Community | Practice Learning and Cognitive Development Participation | Everyday Practice Values Adult Role Mediation Outcome |
| Interpersonal | Learning and Cognitive Development | Activity Adult Role Mediation Child's Response Situation Definition Learning and Cognitive Development |
| Personal | Participation | Routine Context Activity Child Role Adult Role Interactions |

The findings from the interviews with practitioners will be discussed and related to Cultural Historical Activity Theory (CHAT) (Engeström, 1999) to represent and describe the pedagogy within the community plane in relation to practices, learning and cognitive development and participation. CHAT was developed from Vygotsky's theory to represent an activity system. It is proposed that the pedagogy could be regarded as an activity system within the community plane.

Engeström (1999) proposed networks of activity systems and it is suggested that the pedagogy might function in this way with each plane of analysis describing activity systems relating to cognitive development and inclusion with complex interrelationship between them. This would create a dynamic pedagogy susceptible to sociocultural influences within the nursery and from the wider community and society. It would explain the emergence of new

practices and communities of practice, as proposed by Lave and Wenger (1999), through individual's participation in collective activity.

The findings from the observation of MLEs will be discussed with reference to descriptions of movement through the Zone of Proximal Development (ZPD) and concept formation. They will be considered in terms of what they might suggest about the ways adults mediate learning to describe the pedagogy in relation to cognitive development within the interpersonal plane. Reference will be made to CHAT (Engeström, 1999) to situate the MLE within the context of the wider sociocultural influences of the pedagogy and setting.

At the personal plane, findings will be considered in terms of what they suggest about ways in which the pedagogy and practitioners might mediate participation. Reference will be made to conceptual frameworks proposed by Lave and Wenger (1999).

Finally, the findings will be considered in relation to the research questions by referring to themes within and between the planes to highlight the inter-related nature of the pedagogy observed within each plane.

Key Research Questions:

1. How can sociocultural conceptual frameworks and constructs developed from Vygotsky's (1978) theory be applied to investigate the pedagogy in the nursery?
2. How might the pedagogy mediate learning and cognitive development?
3. How might the pedagogy mediate inclusion in terms of participation of all children across the setting?

4. How do practitioners mediate children's learning and cognitive development and their inclusion in terms of their participation?
5. How might practitioners' constructs about young children's learning and development inform the pedagogy in terms of the mediation of cognitive development and inclusion?

In order to critically evaluate the research, the findings will be discussed in terms of possible rival explanations relating to other theories, conceptual frameworks and tools that could offer plausible explanations.

The methods and methodology will be discussed to consider how useful the process was, how relevant and whether alternative approaches might have yielded 'better' findings. Suggestions will be made as to how this could be addressed. This will be considered further in the concluding chapter.

5.2 Pedagogy within the Community Plane

The findings suggested that the pedagogy within the community plane might be characterised by: everyday practice, values, adult role, mediation and outcome. These themes seemed consistent with the characteristics of the community plane, as described by Rogoff's (1995).

Table 5.2: Characteristics of the Community Plane (Rogoff, 1995)

| Plane | Concept | Description | Characteristics |
|--------------|----------------|--|--|
| Community | Apprenticeship | Individuals participating in socially and culturally organised activities that support development | Activities , practices, organisation, purposes, resources, means, cultural tools, values |

These themes were identified in relation to practice, children's learning and cognitive development and participation.

The findings for each theme will be summarised before discussing them in relation to the conceptual frameworks that informed the research. Reference will be made to Vygotsky's (1978) theory of learning and cognitive development. It will be suggested that the pedagogy as an activity system within the community plane could be represented using CHAT (Engeström, 1999) to capture the dynamic, interactive nature of the pedagogy as described by practitioners.

5.2.1 Summary of Findings

5.2.1.1 Everyday Practice

Practice

Practice in the sessions included shared routines when children might be doing the same activity in different classrooms, and opportunities to access different environments. Routines were child led according to and informed by the interests of children without AN and the needs of children with AN. They enabled children without AN to become independent as learners and children with AN to feel safe and secure, ensuring their well-being.

Shared activities for children without AN developed problem-solving and reasoning skills and curriculum skills needed for school. This seemed consistent with the construct of 'school readiness' referred to by Tickell (DfE, 2011). Activities for children with AN focused on developing social skills and communication skills. This suggested that practices created contexts and activities for mediating significant aspects of the culture in terms of the skills needed to access the curriculum in school and participate in the social practices of the nursery.

Learning and Cognitive Development

Everyday practices in relation to learning and cognitive development were differentiated to meet the needs of individual children. This individualised approach was child-led and based on practitioner's knowledge of children. Differentiation was informed by practitioners' pedagogical knowledge (e.g. theories about child development) however, experience was felt to be more significant, suggesting that practitioners' participation in the social practices of the nursery might inform practice.

Participation

Everyday practice in relation to participation suggested that the activities provided and their accessibility facilitated participation. The role of the environment seemed to be significant: activities outdoors were felt to facilitate participation. This suggested changes to the sociocultural context might affect participation.

Practitioners working with children with AN highlighted potential barriers to participation, including the child's developmental needs and the child's ability to choose where and when they participated. Practitioners were concerned that some children were unable to

communicate choice and participation could be imposed on them as a consequence. This suggested that their participation might be influenced by practitioners' constructs about what best practice might be.

5.2.1.2 Values

Practice

Practitioners seemed to value children's independence as learners and the opportunities afforded by the everyday practice for children to pursue their own interests. Independence was within the social dynamic in which practitioners were present and available to intervene and interact with children. Everyday practice was situated in the interaction between the child, the environment and the activities available. Practitioners co-constructed practice by working collaboratively with each other and with the children. This suggested their practice was situated in the sociocultural context of the nursery.

Learning and Cognitive Development

Practitioners' values in relation to learning and cognitive development seemed consistent with the principles of Vygotsky's (1978) theory. Learning was regarded as a social process: children learnt with and from other children and practitioners in the nursery and through their play. It was felt that children's interests should lead learning, however, it was recognised that practitioners might need to intervene to extend and develop interests, perhaps creating new Zones of Proximal Development (ZPD) for individual children.

Practitioners felt learning and cognitive development was influenced by sociocultural factors, such as the environment, experiences in the wider community and the influence of society as

well as within child factors associated within the child's development. This suggested development was regarded as arising from an interaction of complex factors. This seemed consistent with developments from Vygotsky's (1978) theory that contextualise learning and cognitive development within activity systems (Engeström, 1999).

Collaboration with the wider community of parents, medical professionals and educate settings was valued, suggesting that practitioners' knowledge about individual children was co-constructed and that the pedagogy within the community plane was influenced by the wider community of practices in which the child participates.

Different constructs about children's learning and cognitive development seemed to inform the pedagogy for children without AN and the pedagogy for children with AN. Children without AN were regarded as active, independent learners, able to investigate and solve problems independently. Children with AN were felt to need a nurturing approach that recognised and responded to their individual needs by interacting with them to support learning and cognitive development. Practitioners suggested that children with AN might be dependent learners: needing support to actively engage with learning.

Practitioners recognised and valued their role as mediating learning by creating environments, providing resources, activities and interactions that were appropriate for the needs of individual children. Learning and cognitive development seemed to be regarded as a mediated activity by the environment, activities and resources as well as the practitioners' actions and interactions. This seemed consistent with the principles of Vygotsky's (1978) theory.

These findings suggested that practitioners regarded learning as a social process. For some children this arises from their participation in the sociocultural context and interactions available, whilst for others it involves direct interaction with an adult who mediates learning and well-being.

Participation

Practitioners seemed to value participation as benefiting all, consistent with the findings of Talay-Origan (2001) and Clough and Nutbrown (2003). Creating accessible activities and environments that could be adapted to meet the learning and development needs of individual children were felt to facilitate participation. Practitioners valued the child's right to choose to participate. Practitioners highlighted children without AN who chose to participate with children with AN as intuitive and caring. This suggested that practitioners valued these dispositions and tried to foster a culture of acceptance.

5.2.1.3 Adult Role

Practice

Practitioners suggested their primary role was to support and facilitate learning: 'enabling' learning for children without AN and 'assisting' children with AN to follow routines, engage in play and develop language and communication skills. Practitioners working with children without AN felt their role was to excite children about learning, generating enthusiasm and involvement. Practitioners working with children with AN had a more interventionist role: interacting with the activity and the child.

Learning and Cognitive Development

Practitioners felt their role in relation to children's learning and cognitive development was to develop children's independence as learners, helping them to become autonomous within a supportive context. This involved knowing and understanding the child and recognising when to intervene to support learning. It also involved creating environments and providing resources to facilitate learning and helping children to develop self-efficacy. Practitioners seemed to recognise and respond to children's dispositions as learners (Anning and Edwards, 1999) and consequently their identities.

Participation

Practitioners also indicated they had an active role in developing participation by facilitating interaction between children and helping them to share activities together. This was helped by knowing and understanding individual children and being sensitive to their needs.

Practitioners who worked with children without AN invited children with AN to share activities with them, as felt appropriate. Practitioners who worked with children with AN viewed their role as perhaps more proactive: creating opportunities for participation by enabling access. They also felt they needed to be present to reassure children with AN about new situations. They felt their role was to inform others to develop a shared understanding and acceptance of difference.

5.2.1.4 Mediation

Although practitioners' responses emphasised children's independence as learners, they also described learning situations when they intervened to mediate learning. This seemed to be a feature of the practice and pedagogy across the nursery.

Practice

Everyday practices in the nursery were mediated by the shared planning and record-keeping and practitioners seemed to co-construct their practice and mediate each other's practices and professional development. Practitioners working with children with AN indicated that practice and planning were mediated by tools and artefacts, including EYFS, Individual Education Plans (IEP) and reports from outside agencies. These documents informed practitioners' understanding of individual children's development and the approaches they adopted, suggesting they also mediated the social practices in the nursery.

Learning and Cognitive Development

Practitioners identified a range of mediational means (Wertsch, 1991) used in the pedagogical interactions with children to support learning and cognitive development. Shared or common mediational means included: using tools and artefacts such as books and photographs; modelling; encouraging; using language; peer mediation and teaching specific skills.

There were qualitative differences in the way some mediational means were used, particularly language, tools and artefacts and the degree of intervention. These qualitative differences suggested that similar approaches might be used, but adapted to the child's needs or interests. Practitioners might mediate the learning and cognitive development of children without AN

by creating environments, providing resources and guiding children's play when appropriate. Practitioners working with children with AN might mediate learning and development through their interactions with the child and the object or activity by intervening directly between the child and their experience or activity.

This suggested that ZPDs for children without AN might be created by the sociocultural context of the nursery: the environment, activities, resources, interactions and social practices as well as the pedagogical interactions available. ZPD s for children with AN were created by practitioners through MLEs (Feuerstein, cited by Kozulin, 1998) in which the adult interacts with the child and the object.

Participation

Access to the social practices of the nursery and consequently participation might differ for children without AN and children with AN. Practitioners encouraged children without AN to include children with AN in their play and encouraged or prompted them to mediate the child's involvement. This might enable the child without AN to assume the practitioner role or that of a more competent peer, allowing them to 'adopt' the social practices within the nursery that mediate participation.

Practitioners supported children with AN to develop the social skills and language necessary to participate, suggesting that they were supported to access the social practices and to develop the skills needed to engage with social interactions and practices in nursery.

5.2.1.5 Outcome

The pedagogy within the community plane seemed to be concerned with children's holistic development. Their emotional responses and positive affect were valued as much as their progress. This suggested that practitioners sought social feedback from sessions as well as evidence about progress. Informal measures of progress seemed to relate to children's participation in their learning: actively planning the next session and the social practices of the nursery: becoming independent with the routine.

5.2.2 Applying Conceptual Frameworks

The findings within the community plane seemed consistent with Vygotsky's (1978) theory. This situates learning in sociocultural contexts and within social interactions. The sociocultural context of the nursery seemed to be co-constructed by practitioners through collaborative activities such as shared planning and sharing experiences. Tools and artefacts, such as EYFS and planning informed the pedagogy. The pedagogy within the community plane seemed to be child centred with children's disposition and learning style leading learning. Learning seemed to be mediated by the sociocultural context: the social practices (routine, planning) activities, resources, environments and interactions between children and adults.

Practitioners seemed to value children's independence as learners, however, their responses suggested this might be independence within a supportive context in which practitioners are available to mediate learning. Provision of resources, activities and environments, links to outside agencies and valued members of the community were also used to mediate learning.

This suggested that mediation by sociocultural tools and artefacts as well as adult intervention was significant. The role of language was highlighted as a significant mediational means for all children. Language as a mediator of learning seemed to be significant construct associated with the practice and pedagogy within the community plane. This is consistent with Vygotsky's (1978, 1986) theory and described by Wertsch (1984) as necessary to achieve a shared understanding of the learning activity.

Practitioners seemed to emphasise the significance of experience and collaboration to their practice and pedagogy. This seemed to be consistent with Lave and Wenger's (1999) proposal that learning occurs through access to and participation in a community of practices. By participating in the nursery and contributing to practices within it, the practitioners create the pedagogy within the community plane.

5.2.2.1 Pedagogy within the Community Plane as an Activity System

It was proposed that Cultural Historical Activity Theory (CHAT) (Engeström, 1999) could be used to describe and represent the pedagogy within the community plane. The pedagogy could be regarded as an activity system or network of activity systems (Engeström, 1999). It is created by those who participate in the nursery and it is therefore 'multivoiced' as suggested by Engeström (1999). For the purposes of the research, this was reflected in the practitioners' constructs elicited from the interviews, although the children, parents and outside agencies would also contribute to the activity system.

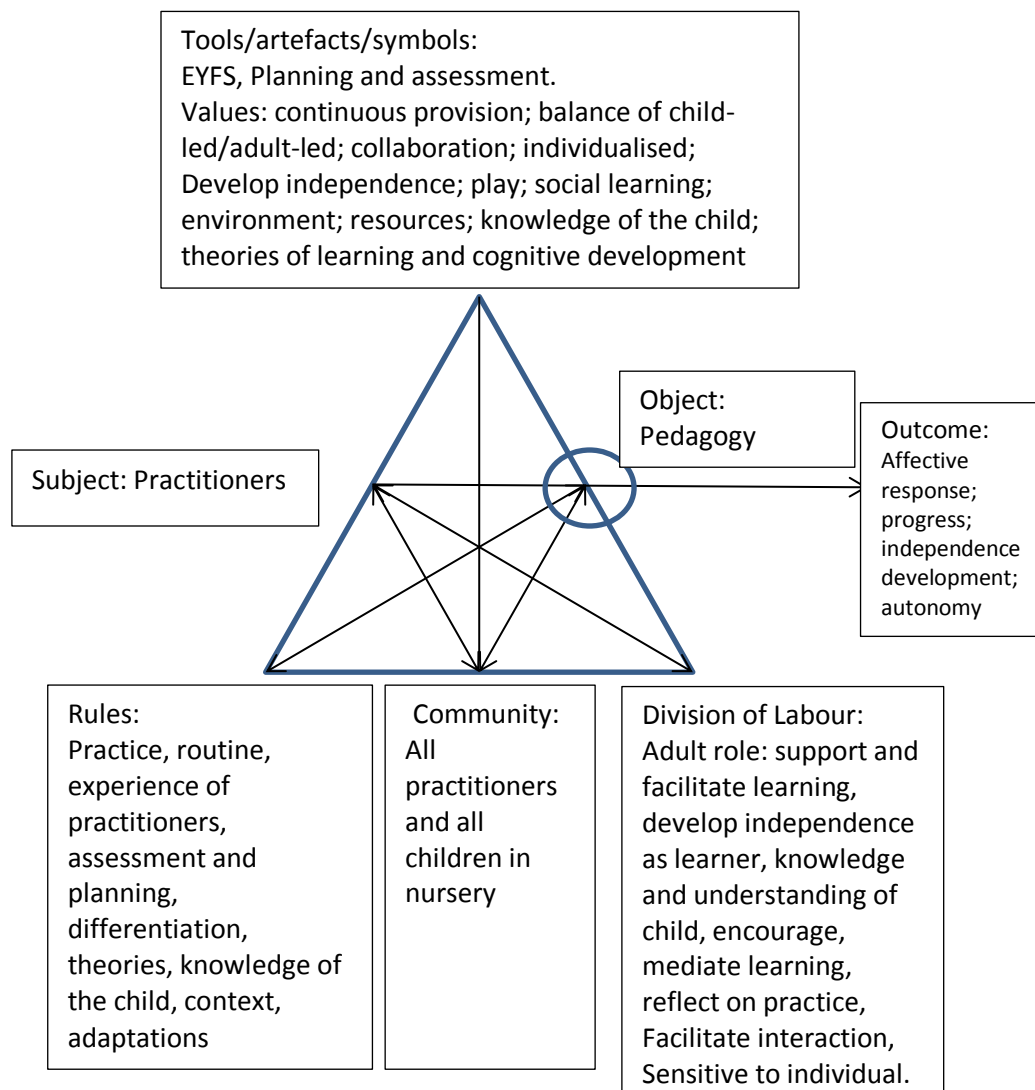
The themes identified from the findings could be compared to elements of an activity system, as defined by Russell (2002):

Table 5.3 Relationship between Elements and Themes identified within the Community Plane

| PEDAGOGY within the COMMUNITY PLANE | | | |
|--|---|---|--|
| Element: | Practice | Learning and Cognitive Development | Participation |
| Subject | Practitioners in the setting: teachers and teaching assistants | Practitioners in the setting: teachers and teaching assistants | Practitioners in the setting: teachers and teaching assistants |
| Object | Practices in the setting | Supporting children's learning and cognitive development | Facilitating participation |
| Outcome | Affective response Progress Children without AN: planning activities Children with AN: development | Progress Independence Affective responses | Participation in activities and social practices (e.g. routines) |
| Tools | EYFS IEP Reports Planning Assessment Values: Continuous provision; Balance Differentiation; Collaboration Co-construction | Values: play; social process; interest-led; individualised; learning environment; factors; independence; learning style. Mediational means Psychological and material tools | Values: individual differences; dispositions; differentiation. Mediation: encourage; prompt; wellbeing; peer mediation; model; facilitate access. |
| Rules | Routines Experiences Assessment and Planning Activities Differentiation according to needs and interests | Differentiation Theories Experience Knowledge of child Activities Communication (language, PECS, Makaton) | Context Adaptations Activities Groups Access |
| Community | Practitioners Mainstream Special Provision Parents Outside agencies | Practitioners Mainstream Special Provision Parents Outside agencies | Practitioners Mainstream Special Provision Parents Outside agencies |
| Division of Labour | Adult role: support and facilitate learning; enable and assist | Adult role: knowledge of child; create environments; encourage and help; intervene; develop independence | Adult role: facilitate interactions; sensitive to individual needs; invite; make accessible; inform; choice |

The pedagogy within the Community Plane could be shown as an activity system using CHAT (Engeström, 1999).

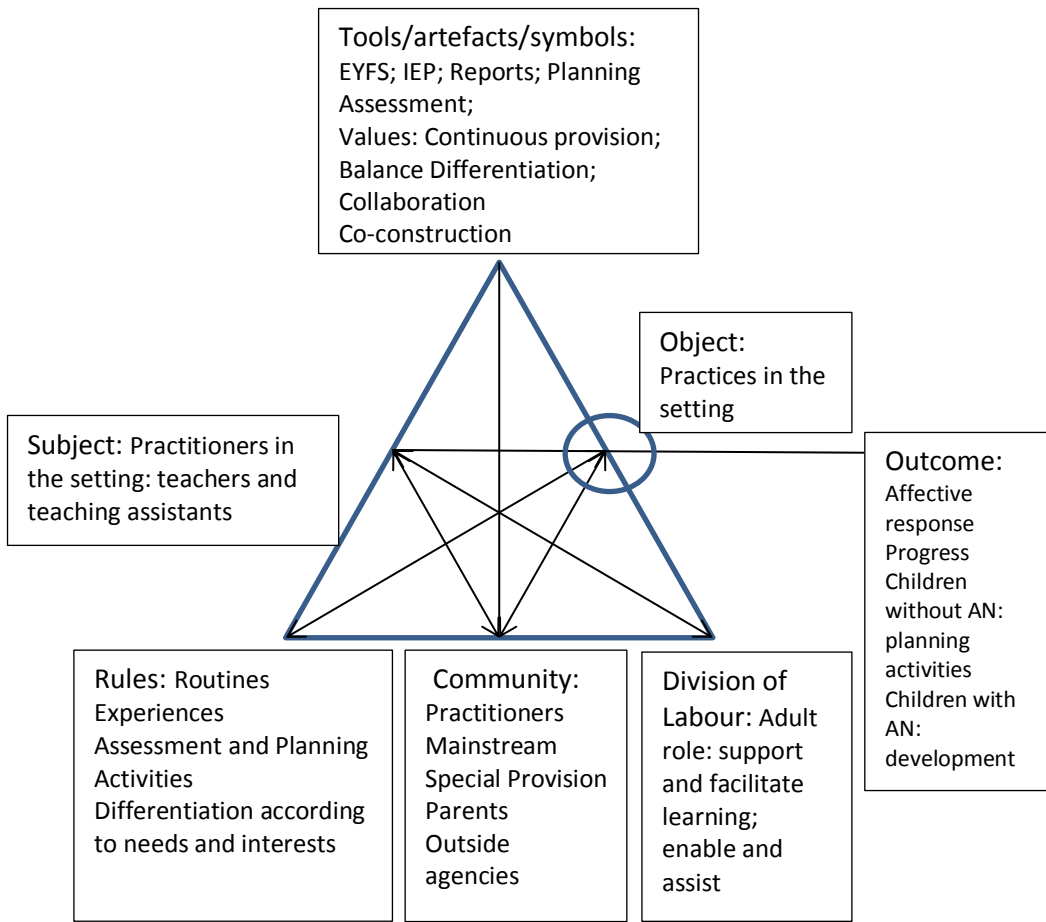
Diagram 5.1: The Pedagogy within the Community Plane as an Activity System, based on Engeström (1999)



The practitioners' co-construction of the pedagogy is mediated by their values in relation to practice, learning and cognitive development and participation; the artefacts, such as planning documents; the rules associated with the social practices and theories about child development that guide planning and their role. Practitioners' experience, pedagogical knowledge and knowledge of individual children act as 'rules' that guide the pedagogy. The role of adults in relation to children in their care constitutes the division of labour.

The pedagogy could be regarded as a network of activity systems, in this case, related to practice, learning and cognitive development and participation for all children, regardless of any AN.

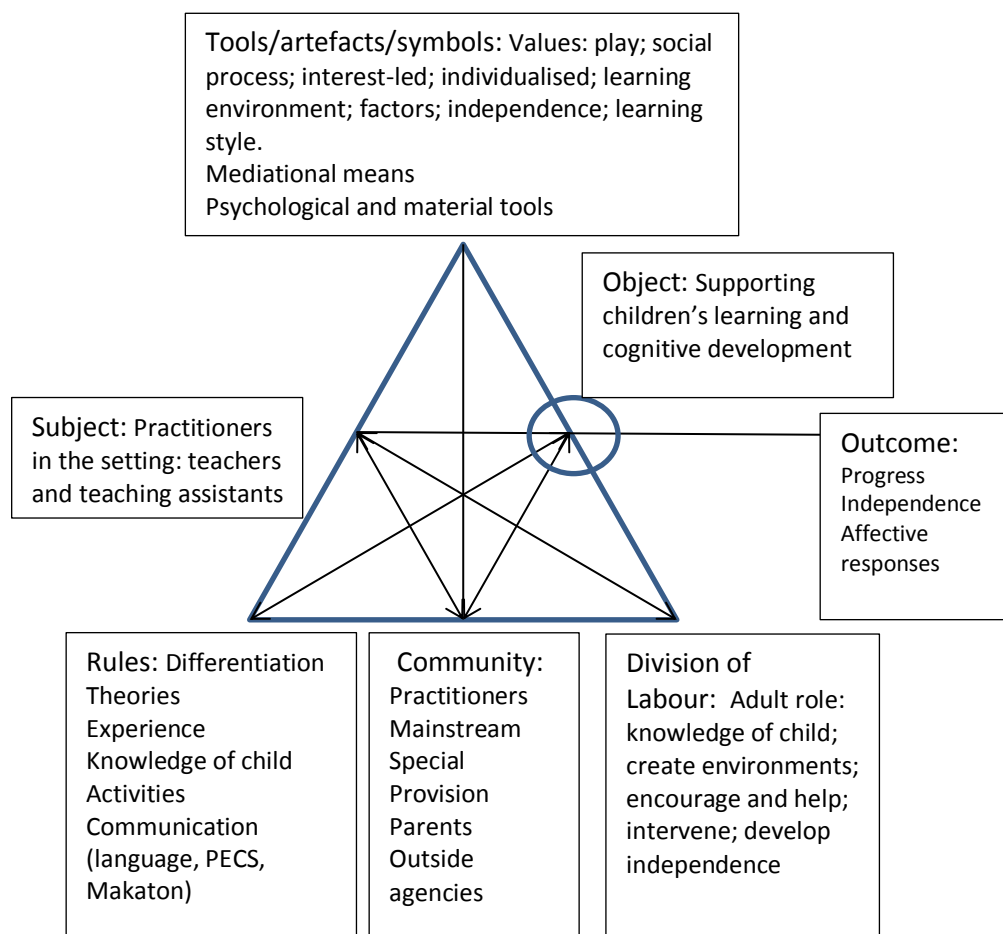
Diagram 5.2: Pedagogy in relation to Practice as an Activity System, based on Engeström (1999)



Practice within the nursery is mediated by practitioners' pedagogical values: what they might be aiming to provide, together with practical considerations, such as the routines and requirements for assessment and planning. Practices develop within a wider context of influences that includes parents and outside agencies. The rules that guide practice are the

routines agreed by the practitioners, their experience of participating in the nursery, planning and information about individual children's development. A further 'rule' is the recognition that practice needs to be differentiated to support the learning and development of individual children. The division of labour is determined by how adults construe their role: to enable children without AN and to assist children with AN to learn.

Diagram 5.3: Pedagogy in relation to Learning and Cognitive Development as an Activity System, based on Engeström (1999)

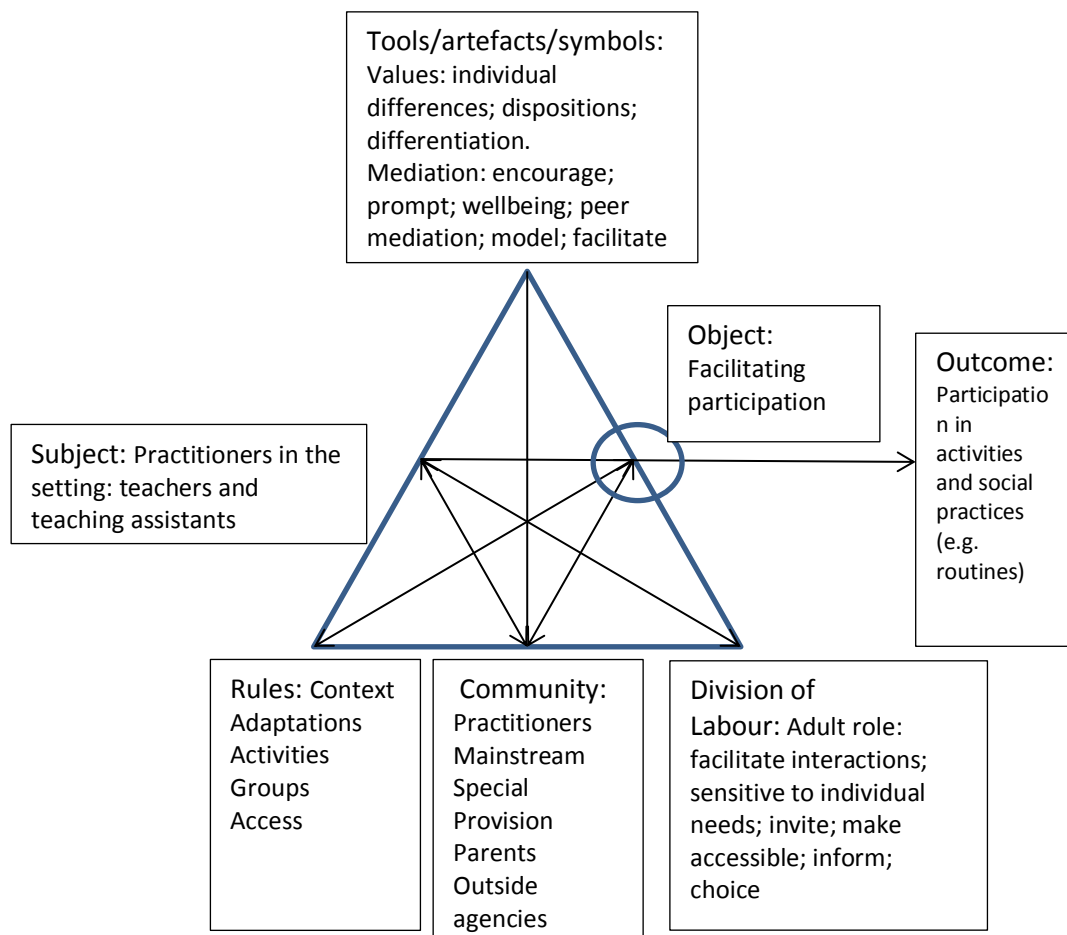


Children's learning and cognitive development is mediated by practitioners' values about children's learning and development and the pedagogical interactions, children's play, the learning environment, factors affecting development, children's independence as learners and the range of mediational means at practitioners' disposal. This process is guided by 'rules'

associated with differentiation according to practitioners' knowledge of the individual child, the activities and approaches that the child responds to and guided by practitioners' constructs about learning. For some children, rules relate to the way the child communicates best.

It occurs within the sociocultural context of the nursery and is mediated by the respective roles of children and adults, through which children become independent as learners. The adult role is to create environments and intervene to mediate learning whilst enabling children to become independent.

Diagram 5.4: Pedagogy in relation to Participation as an Activity System, based on Engeström (1999)



Participation is mediated by practitioners' values, their interventions to facilitate and mediate participation and their constructs about factors that might affect participation. This is in the context of access to groups, activities and the learning environment that constitute the 'rules' influencing the social of practices within the nursery, the extended community of parents and outside agencies and practitioners' constructs about their role. Practitioners construed their role as to facilitate interactions whilst respecting individual's choices and needs, make activities accessible and involve children appropriately for their needs. This constituted the division of labour.

Representing the pedagogy as an activity system demonstrates that it is mediated by practitioners' values and constructs, their participation in the community, their roles and the rules that guide their participation. Changes to any element (for example, updated EYFS, DfE, 2012) would influence the pedagogy as observed, suggesting that the findings from the interviews situate the pedagogy within the community plane in time and place.

The findings within the community plane suggested a common or coherent pedagogy across the nursery with shared practices and values that might be differentiated to respond to individual needs and interest. This supported the existence of a common and individual pedagogy, as advocated by Corbett and Norwich (2005) and Lewis and Norwich (2007).

5.3 Pedagogy within the Interpersonal Plane

Mediated Learning Experiences (MLEs) between practitioners and individual children with and without AN were observed to provide information about the pedagogy within the

interpersonal plane. Kozulin (1998) cited Feuerstein to define a MLE as the adult intervening between the child and the environment or activity to mediate learning.

The MLEs observed seemed to meet Feuerstein's definition or criteria outlined by Kozulin (1998):

Table 5.4: Findings in relation to Definition of MLE

| Feature | Description | Evidence from Findings |
|------------------------------------|---|--|
| Intentionality/ reciprocity | The adult makes the object or activity meaningful to the child and seeks to elicit responses that might indicate development. | Objects and actions were made significant to the child; links were made to child's prior experiences, particularly home; questions, prompts and cues were used to elicit responses. |
| Transcendence | This refers to other learning additional to the immediate experience, including transmission of culture. This could include learning social norms and expectations. | Development of social, communication and affective responses. Culturally significant activities and actions. Conventional play. Managing behaviour. Turn-taking interactions. |
| Meaning | The adult makes experiences meaningful to the child, often at an emotional level, distinguishing it from other experiences. | Links to experiences at home. Based on child's interests. Familiar prompts. Affective responses. |

Six themes were identified relating to the pedagogy within the interpersonal plane: activity characteristics, adult role, mediation, child's response, situation definition and learning and cognitive development. The observations focused on the adult role, the mediation given and the pedagogical interaction, however, it was necessary to record the child's response to reflect the reciprocal nature of this interaction.

Rogoff (1995) suggested that the interpersonal plane was characterised by: direct interaction, roles and structure, cultural activities, collaboration, routines, goals. It was felt that the themes and findings were consistent with this characterisation.

The differences in the type of activity, duration and interaction could be a threat to the validity of the findings. The findings should, therefore, be regarded as situated and as related to the MLEs observed. They are not necessarily generalizable to other pedagogical interactions.

The findings will be summarised and discussed in relation to the conceptual frameworks developed from Vygotsky's (1978) theory and the sociocultural approach that informed the research. In particular, principles of Vygotsky's (1978) theory related to mediation, concept development and movement through the ZPD and CHAT (Engeström, 1999) will be considered.

5.3.1 Summary of Findings

5.3.1.1 Activity Characteristics

The MLEs observed involved activities that were significant to the culture. For children without AN, this was about representing the culture in stories or conventional ways of representing a house that conformed to cultural norms. For children with AN, the activities involved developing exploratory play towards more conventional play with a recognisable outcome. This seemed consistent with Rodriguez and Moros (1999, cited by Van Der Veer, 2008) description of development as proceeding from non-conventional use of objects to pre-conventional and then conventional use.

Practitioners seemed to use the activities to create ZPDs for the children. The choice of activity might reflect practitioners' constructs about individual children's developmental needs. For children without AN, these seemed to be developing culturally relevant knowledge and skills associated with the curriculum in school whilst for children with AN, it seemed to be developing systematic, goal directed actions on objects: helping them to gain control or mastery of their immediate environment.

This suggested that the activities mediated aspects of the culture relevant to the child, enabling the child to develop skills and abilities that might facilitate their participation in nursery.

5.3.1.2 Adult Role

Practitioners seemed to guide the actions and learning of the children without AN by co-constructing the activity with them and respecting their learning choices. Practitioners seemed to lead or direct the actions of children with AN, intervening between the child and the object to mediate learning using a range of actions or mediational means (Wertsch, 1991) to focus attention and help the child to notice and respond.

Practitioners guided or supported children without AN to develop thinking and reasoning, particularly verbal reasoning, to predict, plan and problem-solve. They encouraged a 'scientific approach' helping the child to use evidence to reach conclusions and 'test' hypotheses. This suggested that adults might support children to develop 'scientific' concepts or higher psychological functions (Vygotsky, 1978, 1986) comparable to executive functions (Bøttcher, 2011).

Practitioners supported children with AN to focus their attention, share joint attention, use their senses and develop goal directed actions and more systematic exploration in play. This suggested that adults might mediate the voluntary control (Daniels, 2005) of the child's cognitive functions (attention, perception, memory, Kozulin, 1998) to enable them to develop conventional play that reflects the cultural models of thinking (Kozulin, 1998).

5.3.1.3 Mediation

Practitioners used a wide range of mediational means (Wertsch, 1991). There were qualitative differences in the mediation given. Mediation seemed part of the learning conversation between practitioners and children without AN. There were times when children led learning and defined the focus for the activity. This seemed to be negotiated. Mediation was a significant and consistent contribution to the pedagogical interaction between practitioners and children with AN used to prompt children to notice and respond.

As Wertsch (1984) suggested, language seemed to be a significant mediator, including for children who communicated non-verbally. It was used to provide a narrative of the activity and to engage the child. Language was used to establish shared meaning and to guide and prompt children without AN's thinking and reasoning using open ended questions, helping them to use and apply their knowledge.

Practitioners modelled using language to solve problems. They seemed to externalise their thinking and reasoning and guide children to share this process. Practitioners seemed to use their scientific concepts to guide and shape the child's thinking in the inter-psychological space (Vygotsky, 1978) within the pedagogical interaction between the adult and child, to

enable the child to internalise and use similar thinking processes in the intra-psychological space (Vygotsky, 1978). This suggested that practitioners might use and enable the child to use psychological tools (language) to support concept or cognitive development.

The language used to mediate children with AN's cognitive development seemed to be associated with actions and labelling rather than thoughts and problem-solving, encouraging children to act on toys and objects in systematic, goal directed ways. Practitioners seemed to externalise their observations: helping the child to notice significant events and experiences that were a consequence of actions. This was in addition to more direct mediation, such as hand over hand support or modelling.

This suggested that mediation might guide the child to control unconscious responses (Kozulin, 1998) facilitating voluntary control (Daniels, 2005) within the inter-psychological space, and provide new experiences that the child internalises, supporting the child to make meaningful links and culturally relevant/conventional ways of representing the world in the intra-psychological space. This might provide the context for concept or cognitive development.

The mediation observed seemed consistent with descriptions of mediational behaviours (Klein, 2000; Lidz, 2002, 2003; Isman and Tzuriel, 2008). For children with AN, the mediational behaviours described by Klein (2000) seemed to be particularly relevant: focusing attention, modelling affect, encouraging, expanding the child's experiences, understanding and frame of reference and regulating behaviour.

5.3.1.4 Child's Response

All children seem to be active learners: involved in investigating and pursuing their own interests. Practitioners responded to individual children as if they were 'active meaning makers' (Nind, et al., 2010, p. 653).

Children without AN seemed to share and co-construct the activity with the practitioner. They were willing to follow the practitioners' lead and also to pursue their own interests, suggesting relative autonomy as learners. Children with AN seemed to need more guidance, repetition and intervention to respond. Joint attention seemed transitory, reducing opportunities for mediating learning. Children resumed exploration and investigation led by their interests and perhaps motivated by sensory feedback, suggesting that they explored meaning in their own ways. They might need guidance and mediation to act in ways that support shared understanding.

5.3.1.5 Situation Definition

Children without AN seemed willing to relinquish their definition of the activity in favour of the adults to establish intersubjectivity (Wertsch, 1984) or shared activity as the context for mediated learning. The observations suggested that their participation might be consistent with the findings from Rogoff and Gardner's (1999) study of mothers helping their child to solve everyday problems described as 'graduated participation' (Rogoff and Gardner, 1999, p. 102). In this process, the mother guides the child so that responsibility for the problem solving shifts from the mother to the child during the pedagogical interaction. In the same way, the responsibility for the activity seemed to shift from the practitioner to the child without AN.

Children with AN needed more specific interventions and mediation to engage with the activity in the way the practitioner intended in order to share the situation definition. This seemed to be transitory. Consequently, intersubjectivity seemed fragile and the context for mediating learning needed to be re-created. Practitioners seemed to intervene to create a succession of ZPDs that followed on from the child's actions and attempted to shape these towards more conventional ways of interacting with objects.

Practitioners also allowed the activities to develop in the direction chosen by the child and followed their lead in a dialectical process, as described by Vygotsky (1978)

5.3.1.6 Learning and Cognitive Development

Practitioners encouraged children to adopt a 'scientific approach' either predicting and testing ideas or exploring and investigating in a more systematic way. They encouraged children to develop from what they already knew, their 'everyday concepts' (Vygotsky, 1978). For example, knowledge of their own house, investigating blocks or exploring the balls. They supported children to develop scientific thinking: scale of the house, transparency of the windows, gradient of the guttering when putting the ball on. This thinking could be regarded as culturally significant to formal education. It might have direct links to curriculum expectations.

Children without AN demonstrated higher cognitive functions, such as thinking and problem-solving whereas children with AN needed guidance to develop cognitive functions, such as memory, attention and perception.

Children without AN were encouraged and supported to use language as a psychological tool to mediate their thinking, reasoning and problem-solving. Children with AN were encouraged and supported to act on objects in more systematic and conventional ways that might be significant to the shared culture: matching, building towers, playing a game with rules, making pictures and taking turns with balls. This seemed to create the interpsychological space necessary to mediate learning.

Children without AN showed culturally appropriate social, affective and communication responses within the pedagogical interaction. This seemed to facilitate the learning dialogue and intersubjectivity (Wertsch, 1984). The pedagogical interaction between the practitioner and children with AN seemed to mediate social, affective and communication development. This seemed to be a significant outcome as well as evidence of new actions and/or more systematic responses. This suggested that MLEs might facilitate development of social, affective and communicative responses as well as cognitive functions and that these could be significant to intersubjectivity for children with AN and creating the context for mediation of cognitive development.

5.3.2 Applying the Conceptual Frameworks

The findings within the interpersonal plane seemed consistent with Rogoff's (1995) description and with Feuerstein's (cited by Kozulin, 1998) description of the MLE. The findings highlighted the significance of pedagogical interactions and mediation for children's learning and development. Qualitative differences in activity and mediational means were

observed for children without AN and for children with AN. Mediation seemed to develop within the interaction and was adapted to the needs of the child. It seemed a natural part of the interaction rather than imposed as a chosen teaching technique.

The findings suggested that the pedagogy within the interpersonal plane included practitioners creating ZPDs through activities that were linked to children's interests and prior learning based on their knowledge and understanding of the child, and sharing the activity with them to mediate learning. The mediational means appeared to be similar for all children, but adapted to the needs of the individual and the nature of the activity. Language seemed to be consistent and significant form of mediation. Language was introduced as a psychological tool to mediate thinking and problem-solving for children without AN. Practitioners used open-ended questions to elicit children's thinking and problem-solving and to create interpsychological space (Vygotsky, 1978) for this to develop. Practitioners also modelled using language for thinking by articulating their thought processes.

Language was used to provide a narrative for the activity, label, prompt and cue responses alongside other more direct forms of mediation such as modelling and hand over hand prompts to support the child with AN. Mediation seemed to assist the child to share the practitioner's situation definition (Wertsch, 1984) and show more goal directed actions, such as building a tower with blocks or making a picture. Mediation enabled the children to experience the effects of their actions within the inter-psychological space (Vygotsky, 1978) shared with adults in order to notice, focus their attention, make sense of and recall meaningful associations. Mediation might assist children with AN to voluntarily control lower

cognitive functions (Daniels, 2001) to develop scientific concepts and/or to engage with activities in ways that are meaningful to the shared culture and community of learners.

The role of language as a mediating tool for learning and development is significant to Vygotsky's (1978, 1986) theory. Wertsch (1984) emphasised the role of language and communication to negotiating the activity and achieving a shared representation of it. Using prompts such as the 'ready steady go' and communication strategies such as PECS and Makaton might facilitate this for children with AN.

Wertsch's (1984) description of development through the ZPD involving situation definition, intersubjectivity and semiotic mediation seemed appropriate to describe the MLEs observed. In this conceptualisation, the adult and child represent the activity in different ways, for example, transforming a box into the exterior of a house with windows and doors (adult) or transforming a box into the interior of a house with cots and seats (child without AN) or building a tower with blocks (adult) and exploring moving blocks (child with AN). Through their interaction, the child and adult achieve a shared understanding of the activity described as intersubjectivity (Wertsch, 1984). For example, the child without AN joins in with planning where windows will go on the box and the child with AN adds a block to the tower. This provides the context for mediation of learning.

A significant difference in the MLEs observed was that the practitioner needed to mediate the involvement of the child with AN: helping the child to notice and join in by making the actions significant and meaningful. The practitioners used different mediational means to guide participation.

Other constructs used to describe development through the ZPD might also be usefully applied to describe this process, including Leading Activity (Griffin and Cole, 1984) and Joint Involvement Episodes (Anning and Edwards, 1999, 2004), however it was felt that Wertsch's description could be applied to describe establishing joint attention and joint involvement. This seemed to be particularly relevant for children with AN.

The focus for the activity was negotiated between the participants in the activity: the adult and child. For the MLEs observed, this was not always in favour of the adults. Practitioners would also follow the child's lead and accept their situation definition. For children with AN, the situation definition seemed to move between the adult and child representing a dialectical process, as described by Vygotsky (1978).

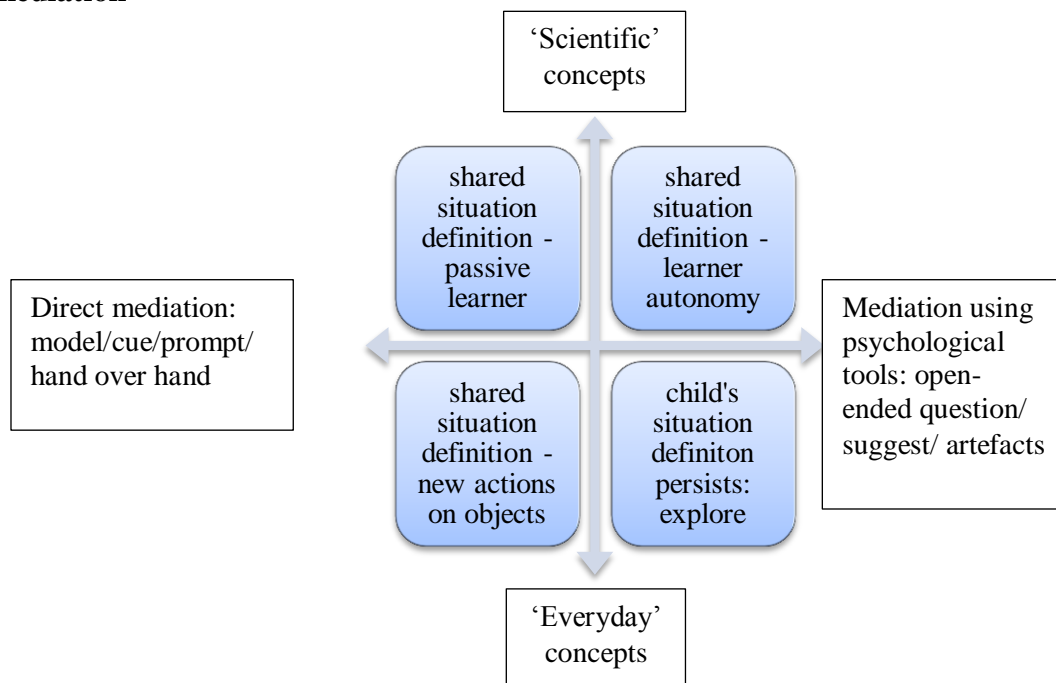
There seemed to be evidence of concept development from everyday concepts: a child's knowledge of their own house or the child's exploration of objects, to scientific concepts: developing understanding of scientific properties such as transparency or developing more systematic ways of acting on objects to produce an outcome or effect. Children without AN showed evidence of culturally significant knowledge and skills needed to participate in formal education in school (literacy and numeracy) as well as use of psychological tools, such as language to mediate their independent activity. Mediation seemed to assist children with AN to apply cognitive functions, such as perception, attention and memory to the learning activity: noticing and responding to the information presented.

This suggested that MLE and mediation might have shared principles and processes that are differentiated to respond to the needs of the individual. This could be evidence that the

pedagogy within the interpersonal plane is common and differentiated for the individual, consistent with Corbett and Norwich (2005) and Lewis and Norwich (2007) findings. It is suggested that the interaction between cognitive functions and mediational means might inform this differentiation.

This could be represented in a matrix similar to that described by Kozulin (1998):

Diagram 5.5 Matrix to show possible interaction between concept development and mediation



In this diagram, mediational means are on a continuum from direct mediation or intervention by the adult to use of psychological tools, such as language and questions. Cognitive development is represented on a continuum from 'everyday' concepts: what the child knows and understands already; to 'scientific' concepts: more developed understanding and higher cognitive functions. Representing cognitive development on a continuum indicates that

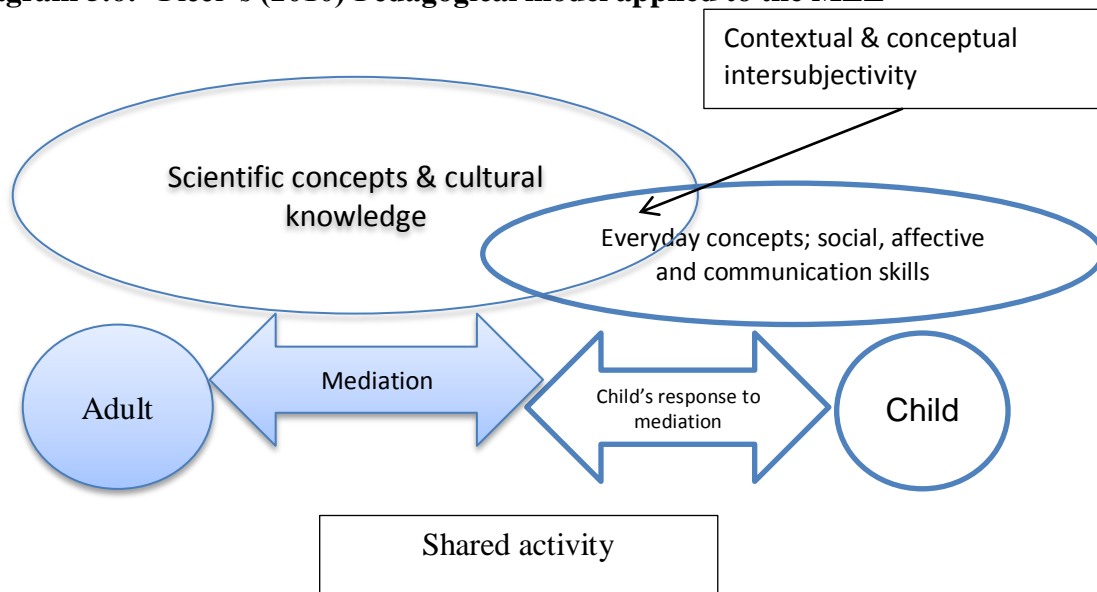
development is from the individual's actual development of 'everyday concepts': pre-conventional use objects for children with AN; thinking, reasoning and problem solving developed from prior experience for children without AN, towards potential development. The appropriateness of the mediation will determine the outcome.

The interaction between the mediation and the child's cognitive development determines intersubjectivity and the extent to which the situation definition is shared. Inappropriate mediation for children without AN might create learner passivity. It might cause children with AN to disengage. Appropriate mediation supports 'next-step' development through a shared understanding of the activity and guided or graduated participation.

Fleer (2010) developed Hedegaard's (1995) Double Move to describe the interaction between the adults' scientific concepts and the child's everyday concepts through shared activity in which the context and concepts are shared to capture the dynamic nature of this process.

This was applied to the findings from the pedagogical interactions observed within the MLE:

Diagram 5.6: Fleer's (2010) Pedagogical model applied to the MLE



(Based on Fleer, 2010)

Conceptual and contextual intersubjectivity are achieved through the shared activity and when there is overlap between the adult's scientific and cultural concepts and the child's everyday concepts. This occurs through adult mediation that is reciprocated by the child's social, affective and communicative responses, including motivation.

In this way, a shared situation definition is achieved to provide the context for mediating learning: the practitioner and child are applying their individual knowledge and understanding and cognitive functions to the shared activity. The child benefits from access to the practitioner's knowledge and understanding of the cultural significance of the activity.

For example, the practitioner and child shared the activity of making a house from a box. The child's understanding of 'house' was based on everyday concepts perhaps developed from

experiences at home, i.e. inside the house. The practitioner's knowledge and understanding of 'houses' as a concept and conventional ways of representing them within the wider culture guided the child's activity: the child created windows in conventional places on the box: top right and left of the box. Not all houses are like this; it represents the cultural convention.

This could describe the transformation of the child's everyday concepts towards the practitioner's knowledge and understanding of the culturally significant scientific concepts needed for formal education within the context of the pedagogical interactions observed.

The MLE, as described by Kozulin (1998) shares characteristics with Vygotsky's (1978) theory of learning with others mediated by tools and artefacts. If MLE is regarded as a feature of the interpersonal plane that operationalizes Sustained Shared Thinking (SST), then it might be appropriate to consider the influence of the context on this interaction. This would be consistent with Rogoff's formulation of the inter-connectedness of development within the different planes.

5.3.2.1 Pedagogy within the Interpersonal Plane as an Activity System

It is proposed that the MLE could be regarded as an activity system that mediates children's learning and cognitive development through pedagogical interactions with an adult who intervenes between the child and the object. This could be represented using CHAT (Engeström, 1999) to show the contextual influences in terms of the community, rules and division of labour.

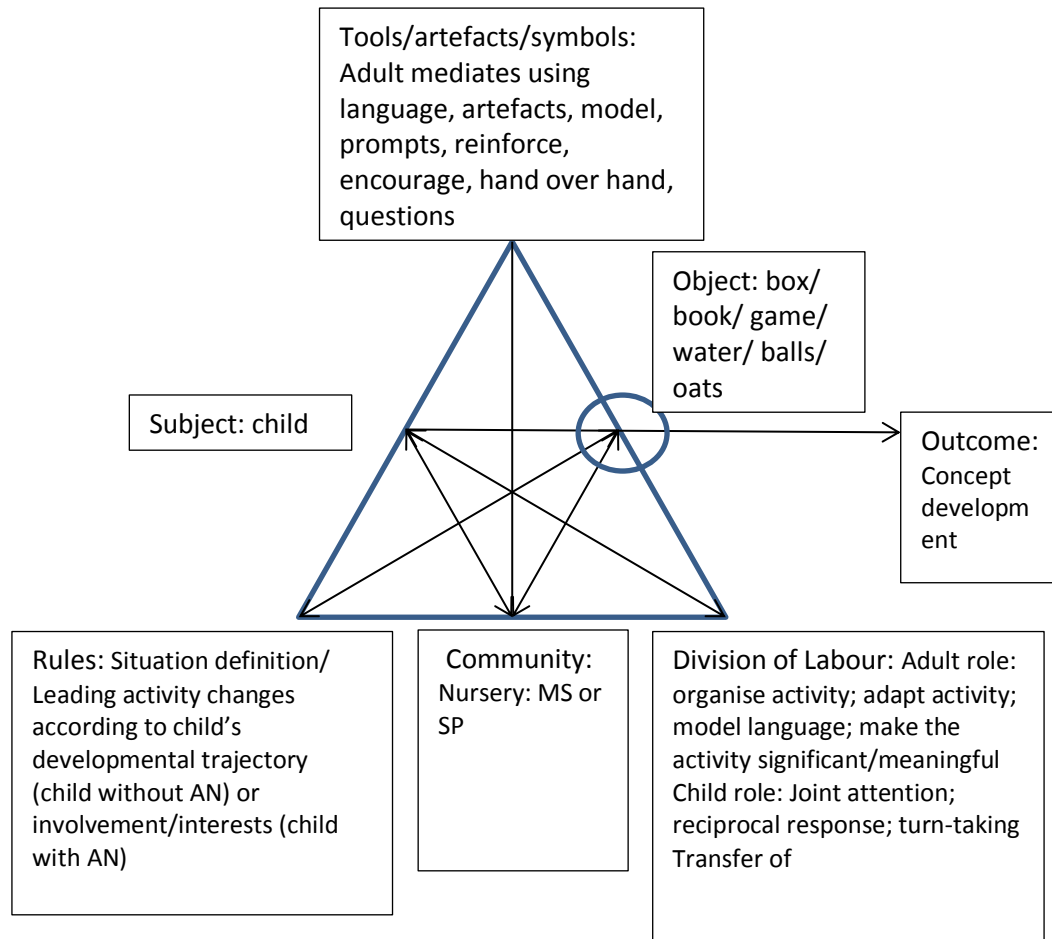
The themes and findings identified seem to correspond to the elements of an activity system, as defined by Russell (2002).

Table 5.5: Relationship between Elements and Themes from Interpersonal Plane

| Element : | Themes: Common | Themes: Child without AN | Themes: Child with AN |
|---------------------------|--|---|--|
| Subject | Child with AN; child without AN | Child without AN | Child with AN |
| Object | Transform a box into a house Book Board game Play in water Play with balls and sensory toys Explore porridge, dry oats and glue | Box – transform into house: exterior or interior Book – share story | Board game Play with water or blocks Play with balls and sensory toys Explore wet/dry oats and glue |
| Outcome | Concept development: learning and cognitive development | Higher psychological functions, problem-solving, thinking and reasoning, curriculum skills, Using psychological tools | Voluntary control of: attention, perception, memory. Goal directed actions Systematic approach Sensory responses Explore in play |
| Tools | Language; artefacts; model; prompt; reinforce; encourage; hand over hand; questions | Questions to develop thinking, reasoning and problem-solving; artefacts (picture); tools; praise | Verbal prompts; questions to focus attention; ready, steady, go prompt; hand over hand; praise and encourage; |
| Rules | Situation definition/ Leading activity changes according to child's developmental trajectory (child without AN) or involvement/interest (child with AN) | Child accepts adult's situation definition/leading activity before introducing own | Child shares adult's situation definition/ leading activity briefly then resumes own activity/definition |
| Community | Nursery: mainstream or special provision | mainstream | Special provision or mainstream (1 child) |
| Division of Labour | Adult role: organise activity; adapt activity; model language; make the activity significant/meaningful Child role: Joint attention; reciprocal response; turn-taking | Adult role: guide learning; develop skills; encourage 'scientific approach'; follow child's lead; encourage learner autonomy Child role: apply knowledge and understanding; share activity; act autonomously; verbal reasoning | Adult role: lead learning; develop communication; focus attention; develop social skills (turn-taking & reciprocity); reinforce; encourage and support goal directed actions Child role: goal directed actions; sequences of actions; actions on objects; conventional play |

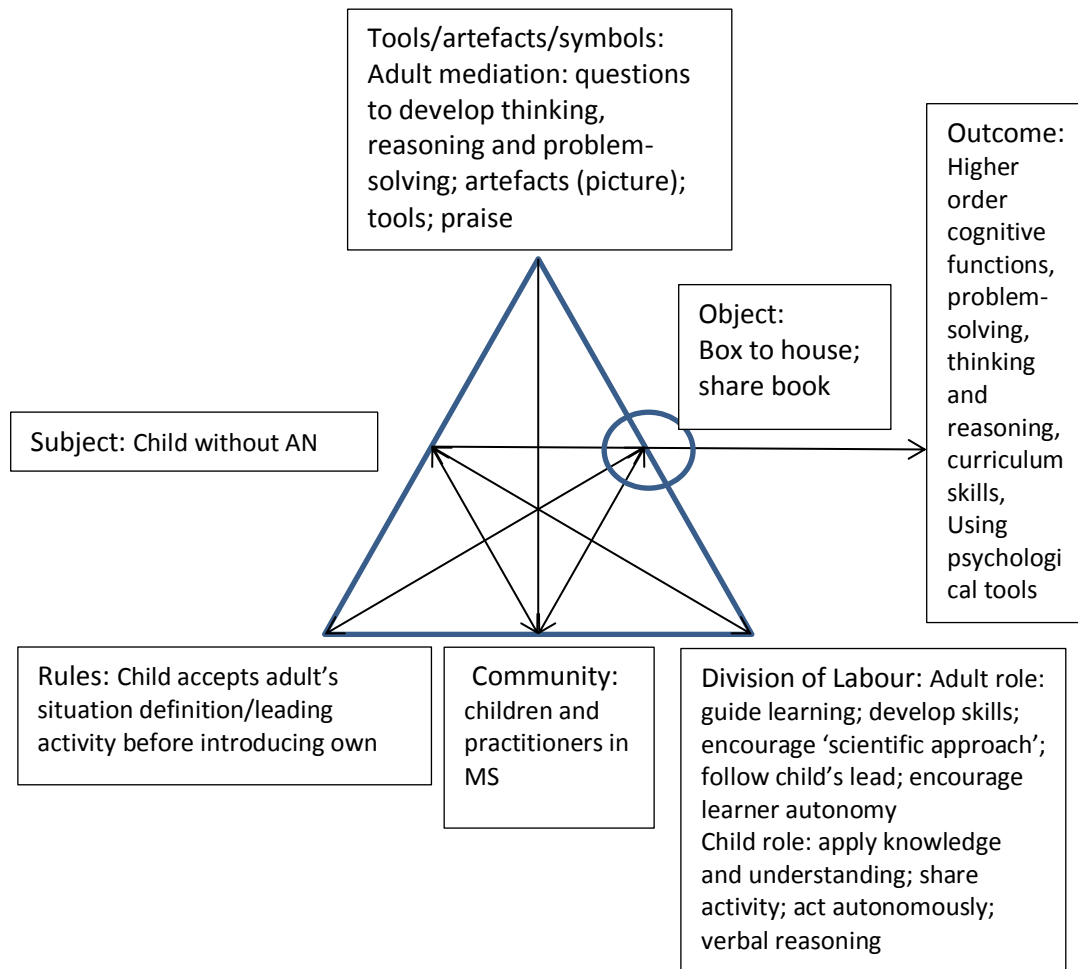
This could be represented as:

Diagram 5.7: Activity System for MLE for Children without AN and Children with AN



In this activity system, practitioners use a range of mediational means to intervene between the child and the object to support concept development. The pedagogical interaction is mediated by the rules and social practices of the setting, the community in which the interaction occurs and the division of labour. The 'rules' might be explicit, or, implicit rules about the situation definition. The division of labour refers to the ways in which responsibility is transferred from the adult to the child through a series of transformations in relative roles to support concept development and learner autonomy.

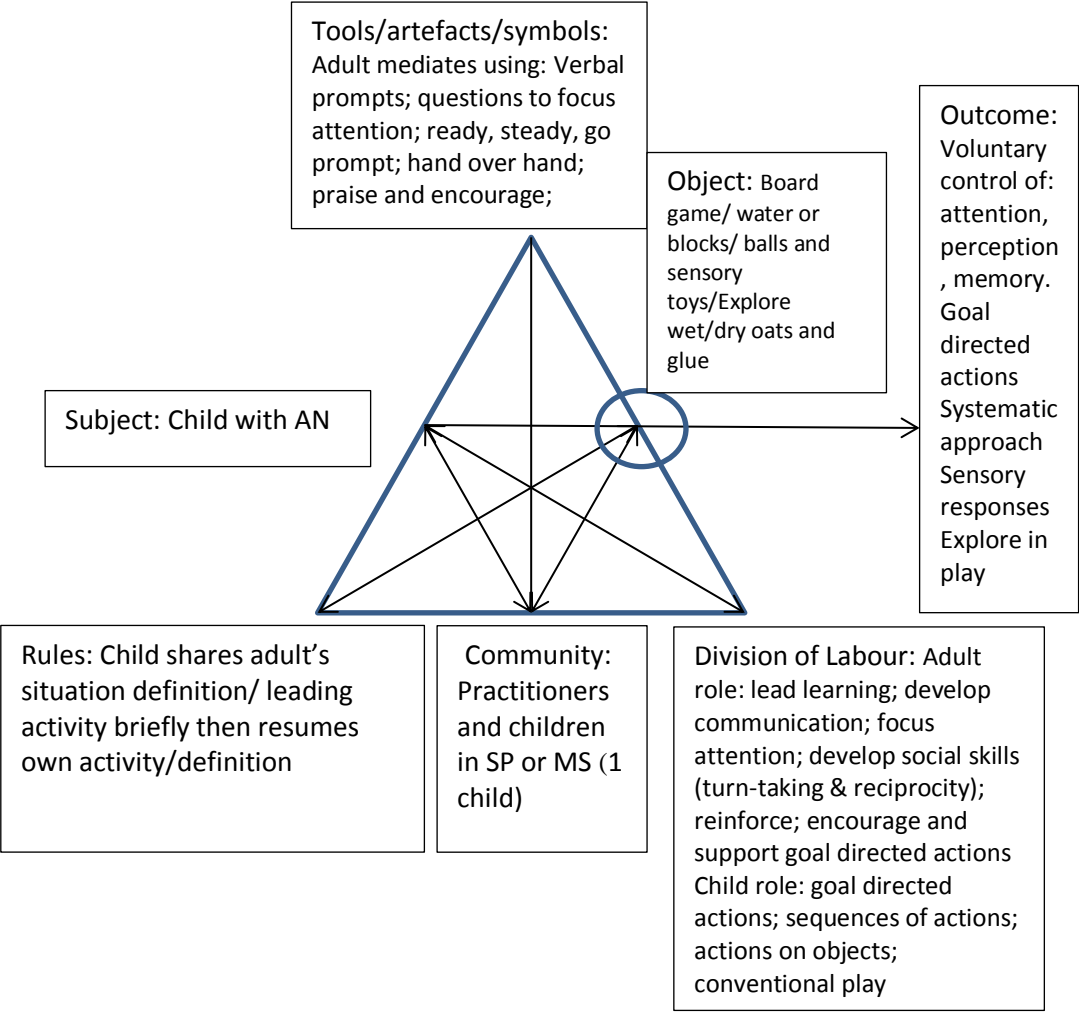
Diagram 5.8: Activity System for MLE with Children without AN



In the activity system for children without AN, the child's play is mediated by that practitioner introducing psychological tools (language and artefacts) to help the child to apply knowledge and develop understanding. This is mediated by the intersubjectivity created when the child accepts the 'rules' or the practitioner's situation definition and the practitioner guides the child's participation to shift responsibility for the activity from the practitioner to the child through a series of transformations in the division of labour. This is in the context of

the community of practice within MS that might include practitioners’ constructs about learning and cognitive development expressed as values in the interviews with practitioners.

Diagram 5.9: Activity System for MLE for Children with AN



The activity system for children with AN shows the child’s actions on objects mediated by more direct prompts, guidance and intervention from the practitioner to develop these actions towards more conventional play and to help the child control and apply cognitive functions. This happens when the child shares the practitioner’s situation definition, accepting the practitioners’ ‘rules’ that create the context for intersubjectivity. The division of labour refers

to the reciprocal responses that develop through this interaction, providing the interpersonal context for shared activity and mediation.

Engeström (1999) suggested that the oval around the object signifies the dynamic nature of actions on the object. For children with AN, the nature of these actions and how they are mediated might be significant to their cognitive development, for example, understanding the effect of actions on objects, noticing, focusing attention. The adult mediates the child's actions on the object rather than thinking and reasoning in relation to actions on the objects. For children with AN, this representation could apply to individual actions or sequences of actions rather than the activity as a whole as each action seemed to be mediated and the mediation changed as part of the dialectical process.

This conceptual framework might not adequately capture the reciprocal nature of the interaction, the changes in focus of the activity or situation definition and the social, affective and communicative responses that seemed part of the pedagogical interaction for all young children but particularly those with AN.

Daniels (2001) refers to Cole's (1996) description of adults teaching children to read. Cole showed overlapping activity systems to demonstrate the transference of control of the activity from the adult to the child and the transformation of functions from the inter-psychological to the intra-psychological (Cole, 1996). Using similar constructs, simple progressions within the MLE for children, particularly those with AN, could be represented as:

Diagram 5.10 (i): Intra-psychological: child's action on object mediated by 'everyday' concepts: knowledge and experiences gained to date and/or actual development:

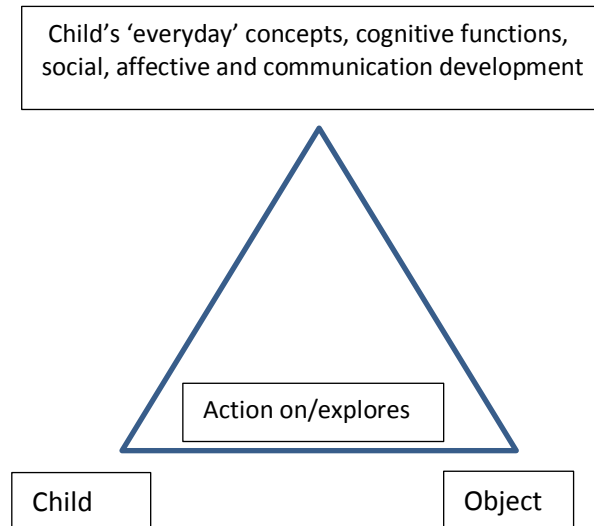


Diagram 5.10 (ii): Inter-psychological: Adult mediates child's actions on object using scientific concepts deemed relevant, psychological and material tools and other mediational means that constitute the 'craft' of the practitioner. The adult's interaction with the child is mediated by intersubjectivity created within the social and pedagogical interaction and the practitioner's knowledge of the child.

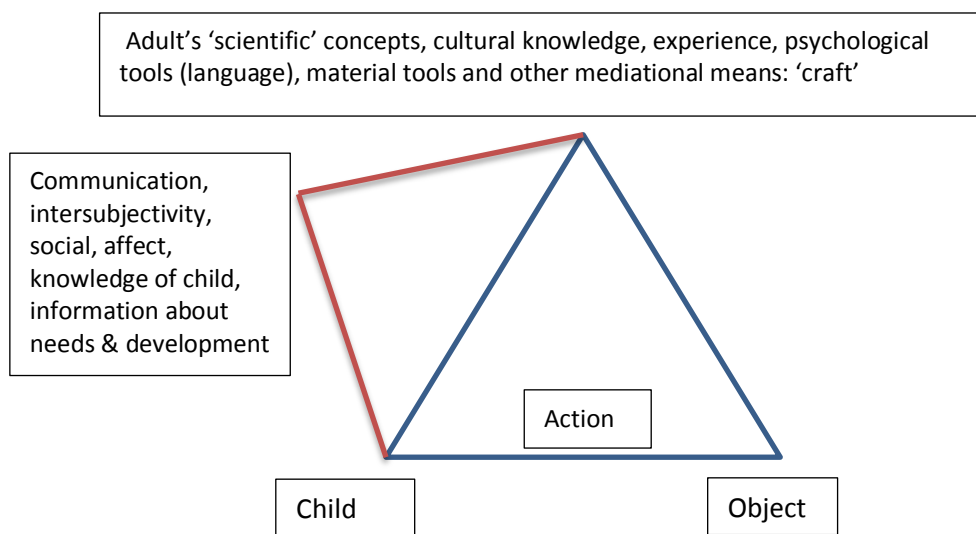
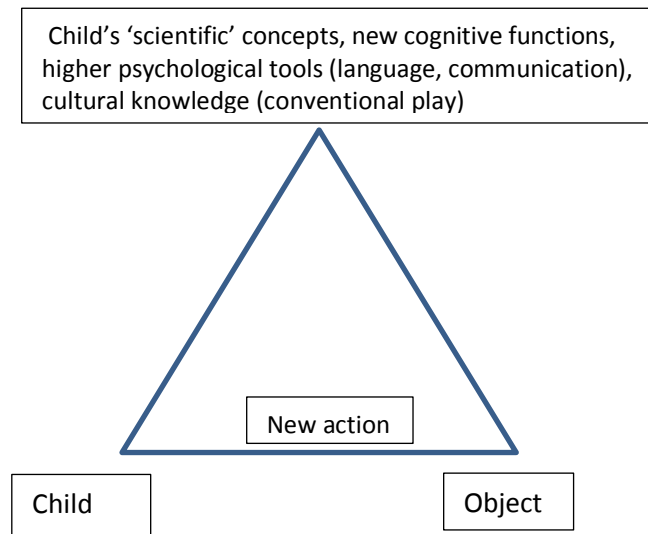


Diagram 5.10 (iii): Intra-psychological: through a process of transformations over time, perhaps through repetition, the child gains new understanding, ‘scientific’ concepts and culturally relevant knowledge that become represented internally and can be applied to other learning and sociocultural situations. This could constitute learning and cognitive development.



Based on Cole (1996)

It is assumed this occurs in the context of the community or practices as represented by CHAT (Engeström, 1999). The rules will be the social and cultural rules relating to the activity and the division of labour is negotiated to ensure development is with the child and not imposed.

This sequence of activity systems represents development. It indicates the significance of the adult's role in mediating the learning and cognitive development of children with AN.

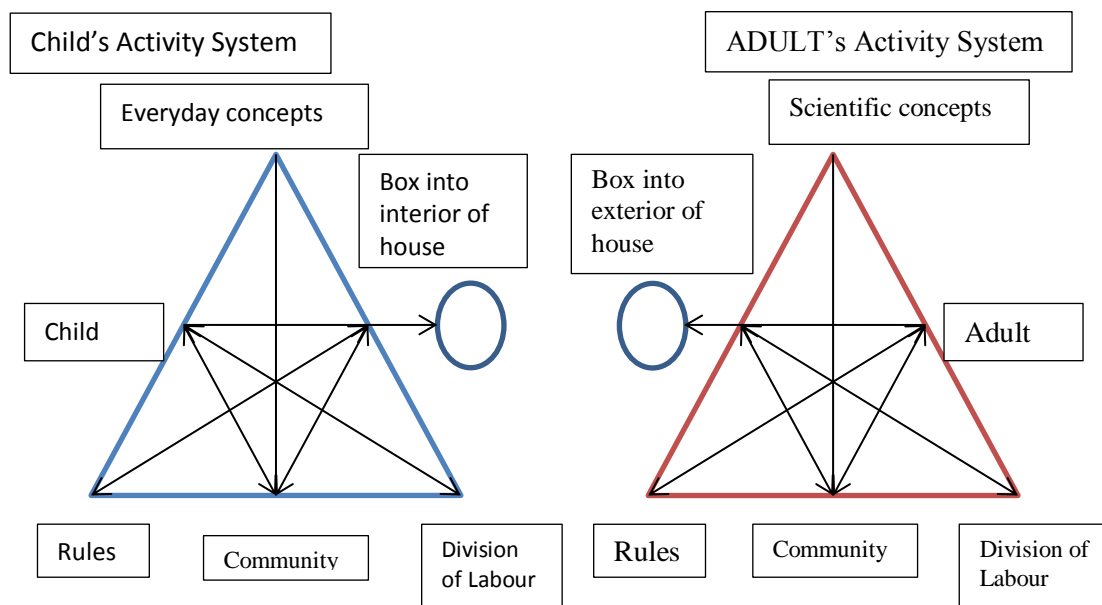
Bøttcher (2011) suggested this could be attributed to the interaction between the cognitive demands of the activity and information processing capacity of the child.

Accepting diagrams 5.10 (i), (ii) and (iii) as representing learning and cognitive development for children with AN suggests that the activity system representing the MLE should be regarded as a network of interconnected activity systems as proposed by Engeström (1999).

A significant aspect of the MLE observed seemed to be establishing a shared situation definition (Wertsch, 1984) or shared object for the activity in order to mediate learning. Children without AN seemed able to sustain or maintain intersubjectivity for the duration of the activity before introducing their own activity. The focus of mediation for children with AN seemed to be to establish this intersubjectivity and reconnect the child to the shared activity when they pursued their own interests.

Engeström (1999) Third Generation model might usefully represent this as:

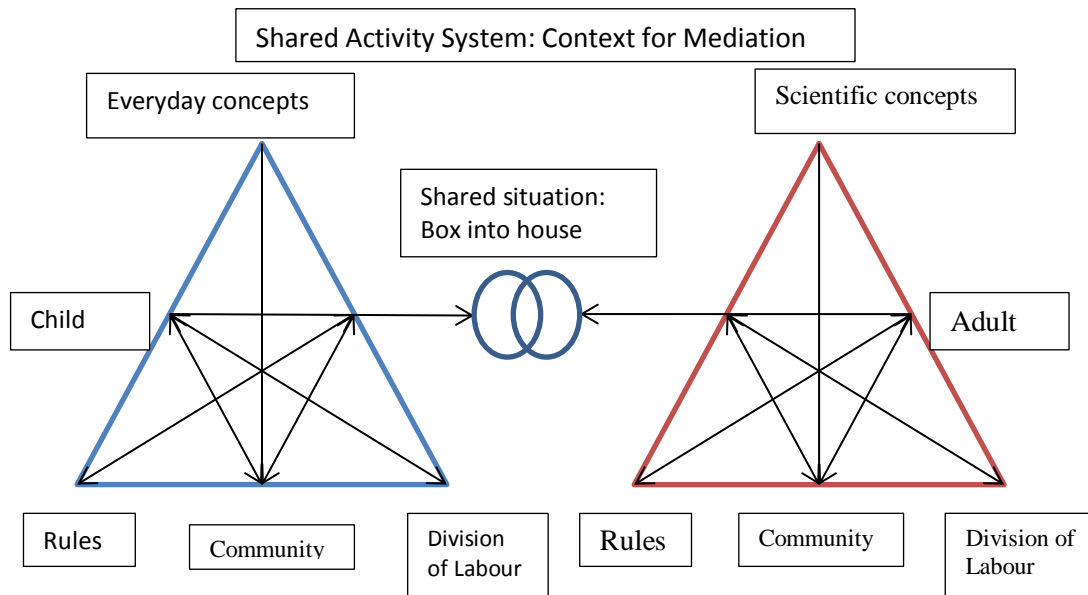
Diagram 5.11 (i): Child's Activity System and Practitioner's Activity System



Based on Engeström (1999)

The activity systems are separate showing the different situation definitions of the adult and child associated with the activity e.g. transforming a box into a house.

Diagram 5.11 (ii) Shared Activity System



Based on Engeström (1999)

The third object created could represent a shared situation definition. For children without AN, this could be stable; for children with AN, this could be transitory necessitating the adult introducing new mediational means and/or following the child's lead to reconnect the child with the shared activity. The network of activity systems that constitute the pedagogy within the interpersonal plane is therefore dynamic and changing, responding to the needs of the individual and the influence of the context.

5.3.3 Summary

The findings suggested that the pedagogy within the interpersonal plane could be described and understood with reference to Vygotsky's (1978) theory and developments from it within the sociocultural approach that contextualises pedagogical interactions within the wider community of practice. It was proposed that the MLE could be represented as an activity system and the processes of mediated learning could be represented as networks of activity systems, as suggested by Engeström (1999) and Daniels (2001). This suggested that the pedagogy within the interpersonal plane could be regarded as a dynamic network of activity systems representing pedagogical interactions between practitioners and children, and children and their peers.

Pedagogical interactions between adults and children might be mediated by the interventions of adults and the mediational means they use: psychological and material tools (Vygotsky, 1978) and the characteristics of the adult in terms of their scientific concepts, knowledge of the community and the culture, and the characteristics of the child in terms of their concept development, social, affective and communicative responses that mediate their involvement. This enables the pedagogical interactions to be differentiated to the needs of the individual, suggesting that the pedagogy within the interpersonal plane is both common and unique (Corbett and Norwich, 2005; Lewis and Norwich, 2007).

Cognitive development proceeds through a series of transformations that arise from shared situation definitions and intersubjectivity in which the practitioners' knowledge and understanding mediates the child's learning. For children without AN, this includes culturally

significant knowledge and understanding, perhaps related to curriculum concepts and skills; for children with AN this might include developing actions on objects that constitute conventional play.

5.4 Personal Plane

Observations were made of two children's experiences and participation in the nursery: a child without AN in the MS class and a child with AN in the SP in order to investigate the pedagogy within the personal plane. This involved following each child in nursery and recording their activity and interactions. The findings provided information about each child's participation in the social practices, activities and interactions within the nursery at a given point in time. Six themes were identified: routine, context, activity, child's role, adult's role and interactions. It was felt these might correspond to some characteristics of the personal plane, as described by Rogoff (1995), in terms of participation and roles. As only one observation was made, the findings might not reflect the dynamic nature of participation and any changes or transformations over time.

The findings will be summarised and discussed in relation to the conceptual frameworks that informed the research, in particular, Vygotsky's (1978) theory and Lave and Wenger's (1999) description of Legitimate Peripheral Participation as this might provide a useful conceptual framework to operationalise the processes associated with inclusion.

5.4.1 Summary of Findings

The findings from the observation of children participating in the social practices, activities and interactions in nursery suggested that the child without AN was mostly independent whilst the child with AN was supported by a practitioner who seemed to mediate the sociocultural expectations of the nursery and assist the child to follow social practices and routines. The extent to which this might be inclusive could depend on whether the social practices that the child with AN is inducted into replicate those available in the MS context or whether participation is on a continuum that enables the child to participate more over time or alongside practices and interactions in MS. Shared, routines and similar activities and interactions might facilitate this.

The child without AN participated in activities that allowed her to represent the culture through her play, for example, acting out social roles (pretending to be ‘mum’) and to develop curriculum skills that might facilitate participation in school. She had opportunities to interact with and participate with other children, enabling her to contribute to the sociocultural practices within her peer group.

The child with AN mostly participated in the specialist environment: this could limit his access to the dominant culture and consequently participation over time. Activities focused on developing social skills, reciprocal interactions and communication skills: skills that might be precursors to participation. The practitioner supported the child to interact with and use objects in conventional ways, helping the child to connect with and conform to the sociocultural expectations about play within the setting.

The findings suggested that the adult role might be to mediate the sociocultural expectations so that learning and development proceeds towards expectations for the age group as well as according to the needs of the child. The practitioner's knowledge and understanding of the child, training and experience in the role might contribute to this.

5.4.2 Applying Conceptual Frameworks

Vygotsky (1978) posited that children learn what is significant to the social, cultural, historical context in which they participate in terms of their immediate context (family, nursery) and the wider context (community, society). The findings suggested that there might be differences in the ways in which children with and without AN participated in the social contexts in nursery and consequently their access to the culture. The child without AN seemed to be relatively autonomous. She shared interactions and activities with other children. The child with AN mostly interacted with the practitioner who mediated his learning and involvement. This could affect participation in the wider context beyond nursery.

The findings provided evidence of learning as a social process (Vygotsky, 1978) for both children. The child without AN mostly participated in activities with other children, suggesting that learning and development might be co-constructed through play. The dialogue during play in the construction area suggested that children without AN might plan and problem-solve together, rehearsing thinking in the inter-psychological space with other children as well as adults, and using language as a psychological tools to mediate their shared activity.

The practitioner intervened to mediate the learning and participation of the child with AN. She seemed to create a series of MLEs by intervening between the child and the object he was interacting with to mediate responses, communication and reciprocal interaction and to create ZPD's. This mediation by the practitioner introduced psychological and material tools and was significant for the child's engagement with activities and participation.

Lave and Wenger (1999) proposed that participation proceeds from Legitimate Peripheral Participation, when the child joins the community of practice at the edges towards full participation when the child is regarded as an active participant contributing to the practices. This could describe a child joining the nursery, observing what was happening and becoming involved as the child feels more familiar and secure with the routine and activities.

The findings suggested that the child without AN might be moving towards becoming a 'full member' of the community of practice within the nursery. She seemed to know and understand how to 'be' in nursery, and could follow the social practices in terms of the routine and social expectations. She contributed to the practices through her interactions with others and her involvement with shared activities. She engaged with activities in ways that could be significant to the culture: developing curriculum skills and using language in ways that replicate the culture of home and education.

The practitioner mediated the participation of the child with AN, guiding and assisting him to follow the routine, engage with activities and develop social responses and conventional responses in play. This suggested that the practitioner mediated the culture of the nursery. The child's participation could be regarded as Legitimate Peripheral Participation with the adult

acting as the 'mature' member of the community (Lave and Wenger, 1999) guiding, assisting and mediating the child's participation.

The nature of the child's AN meant it could be difficult for the child to access the social practices, including the language needed to enable full participation without this mediation. The structure and predictability of the routine and activities in the SP might facilitate this, enabling the child to become an active participant rather than a passive recipient of the culture. This seemed evident in the reciprocal responses that developed between the child and the practitioner and when the child was supported and encouraged to make choices about his activity.

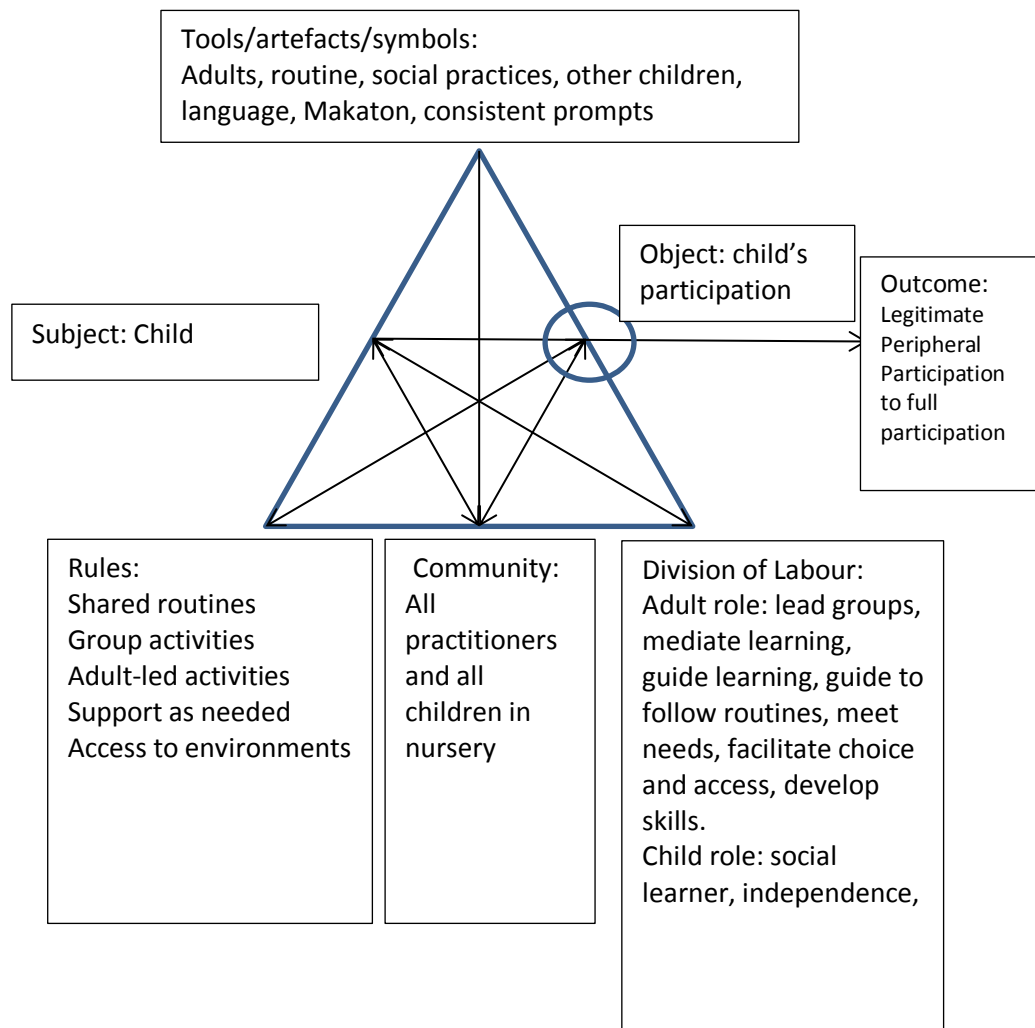
It is possible that mechanisms such as the shared routine, access to different learning environments and mediation of social, affective and communicative responses as well as cognitive development might facilitate participation in the wider community of learners and in the social practices of the nursery.

5.4.2.1 Pedagogy within the Personal Plane as an Activity System

The findings suggested that participation could also be represented as an activity system (Engeström, 1999) within the personal plane: that the process of moving from Legitimate Peripheral Participation to full participation is mediated by a range of factors, including the community of practice or learners, the social rules and the division of labour in terms of relative roles within the community of practices.

This could be shown as:

Diagram 5.12: Participation as an Activity System



This shows participation as mediated by the relative roles of adults and children, the shared routines and activities and intervention by the adult. Practitioners mediate the participation of children with AN. This includes using alternative forms of communication (Makaton) that support social interaction and facilitate access to the culture mediated by language.

Participation is governed by rules relating to the routines, group activities, adult-led activities and the accessibility of the environment. This can limit or enable participation. The role of the adult is to create opportunities for participation, mediating learning, facilitating

interactions and helping the child with AN to follow routines. As a consequence, the child's role and contribution to the community of practices is enhanced. This enables the child to move from Legitimate Peripheral Participation to full participation via a process similar to the graduated participation described by Rogoff and Gardner (1999).

The pedagogy created opportunities for children to develop autonomy and to contribute to the activities and practices, shaping routines and mediation. In this way, they were able to participate in and contribute to the community of practice in the nursery.

5.4.3 Summary

The findings within the personal plane suggested that participation might be facilitated by the shared, routines and social practices across the nursery. All children could be regarded as active participants and members of the community of learners in nursery. Children without AN might achieve full participation over time, as evidenced by their independence with social practices (e.g., routines) activities, interactions and the level of autonomy in the nursery. Children with AN might need adult support to mediate their participation: making the social practices, activities and interactions accessible to them.

The context in which children participate might affect their access to these social practices, activities and interactions that are representative of the wider culture, particularly formal education. This suggested the need to ensure consistency and/or share practice across the nursery as a common pedagogy to facilitate participation.

Participation was regarded as an indicator of inclusion. The findings suggested that children without AN might become included through their participation whereas for children with AN, inclusion needs to be a process that is actively engaged with and mediated by practitioners and members of the community of practice in the nursery.

5.5 Discussion of Findings in Relation to Research Questions

The pedagogy in the nursery was investigated by applying lenses corresponding to Rogoff's (1995) Three Planes of Analysis. Rogoff (1995) proposed that development could be studied within and between these planes to reflect the interactive complex processes involved. It is suggested that the links between the different planes might be surfaced by considering the findings in relation to the research questions.

5.5.1 How can sociocultural conceptual frameworks and constructs developed from Vygotsky's (1978) theory be applied to investigate the pedagogy in the nursery?

Rogoff's (1995) Three Planes of Analysis was applied as a unifying conceptual framework to guide the data collection, analysis and interpretation. This allowed the pedagogy to be described at three levels: the collective, organisational level corresponding to the community plane, the pedagogical interactions between practitioners and children corresponding to the interpersonal plane and the experiences and participation of individual children within the personal plane.

Rogoff's Three Planes of Analysis was chosen because it offered a way of describing children's development that could be applied to pedagogy (Fleer, 2003). It provided a

consistent approach to investigate early years education for all children, including those with AN, that could account for the interaction between pedagogy and development.

The findings within each plane suggested that practice and pedagogy in the nursery might be consistent with Vygotsky's (1978) principles. There was a focus on learning as a social process and an emphasis on the value of play, both principles of Vygotsky's theory.

Practitioners seemed to co-construct the pedagogy, learning from each other, and create opportunities for children to learn from each other as well as with adults. The pedagogy and practice seemed to be co-constructed by those participating in the nursery.

The construct of mediation (Wertsch, 1991; Kozulin, 1998) could be applied to describe the ways in which the pedagogy and culture within the setting develops and the ways in which adults support children's learning and development. For children without AN, mediation included providing psychological tools, particularly language to develop thinking, reasoning and problem-solving skills as well as curriculum-related skills. Practitioners used a range of mediational means to support the cognitive development of children with AN. They seemed adept at differentiating their approach to match the individual needs of the child. Mediation tended to be direct intervention between the child and the object to develop goal directed actions and conventional play.

Practitioners also highlighted the mediating role of the environment and the resources they made available to enable children to direct their play. The mediational means described seemed consistent with Wertsch (1991) formulation of mediation developed from Vygotsky

(1978) and with descriptions of mediational behaviours provided by researchers adopting a mediated learning approach (Klein, 2000; Lidz, 2003, 2003; Isman and Tzuriel, 2008).

Practitioners highlighted the significance of language for mediating learning and this was observed during the MLEs. This is also consistent with Vygotsky's (1978) theory and the role of language as mediating culture. For children with AN, the construct of language also included other forms of communication such as PECS and Makaton that could be regarded as semiotic mediation (Wertsch, 1984).

Practitioners described how they created ZPDs through the provision of activities, resources and adaptations to the environment as well as through their pedagogical interactions with children. The findings suggested that the pedagogical interactions during the MLEs observed might support concept development from 'everyday' concepts: what the child could already do, towards 'scientific' concepts: ways in which the child applied knowledge, solved problems, developed meaningful actions on objects and conventional play. Vygotsky (1978) described this development as arising from a series of transformations.

The findings from the observations of the MLEs seemed consistent with Wertsch's (1984) description of movement through the ZPD in which adults and children define the learning situation or activity in the same way which establishes intersubjectivity as the context for mediating learning. The pedagogical interactions during the MLEs with children without AN seemed to promote 'graduated participation' (Rogoff and Gardner, 1999, p. 102) where the responsibility for problem solving shifts from the adult to the child. For children with AN, the mediation seemed to focus on establishing shared situation definitions and

intersubjectivity by developing social, communication and affective responses as well as responses indicative of cognitive development.

It was suggested that children's participation in the setting could be described with reference to Lave and Wenger's (1999) construct of Legitimate Peripheral Participation and development towards full participation through access to the culture, practices and activities. Children without AN seemed relatively autonomous learners, suggesting they might act as 'full' members of the community of practice. The participation of children with AN was mediated by practitioners and access to the culture was dependent on shared routines, activities and environments.

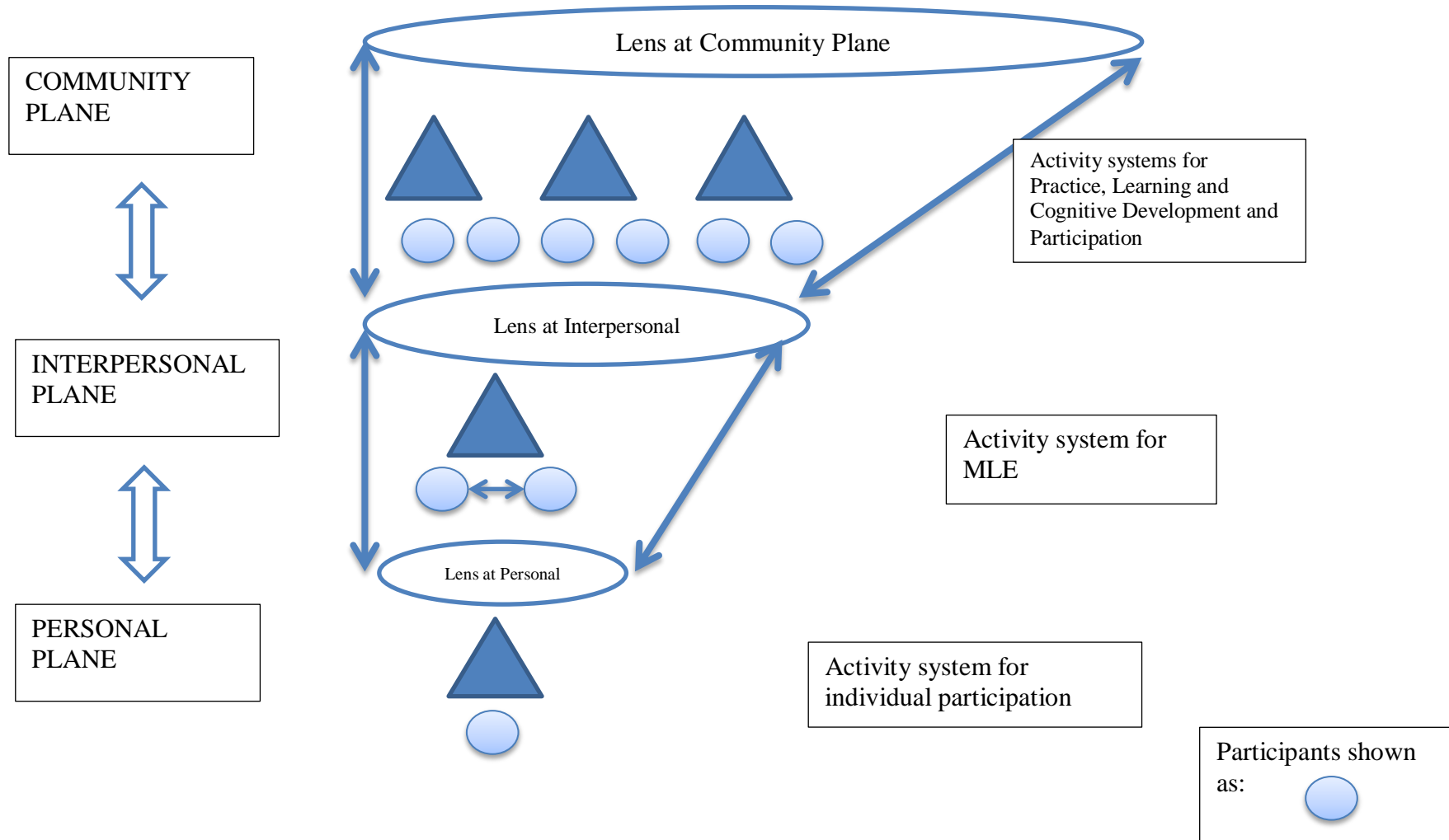
The findings suggested that the pedagogy, as observed, could be represented as a network of interconnected activity systems, represented using Cultural Historical Activity Theory (CHAT), as described by Engeström (1999). These activity systems could represent the pedagogy within the community plane, in relation to practice, learning and cognitive development and participation. This in turn mediates the pedagogical interactions within the interpersonal plane, described as MLEs, through which movement through the ZPD is mediated. The MLEs could also be represented as activity systems that show the transformations arising from mediation of concept development through shared situation definitions and intersubjectivity.

Within the personal plane, the activity systems could represent the mediation of participation from Legitimate Peripheral Participation when there could be significant mediation by members of the community, social practices and routines through shared activities to full

participation and learner autonomy when participation is mediated by social cues and intrapsychological processes.

Rogoff (1995) (p.158) and Fler (2002) (p. 118) showed lenses corresponding to the three planes diagrammatically. The pedagogy as an interconnected network of activity systems could be represented as:

Diagram 5.13: Pedagogy as an Interconnected Activity System



The arrows between the lenses show the mediating effects of the pedagogy between the planes. The lens at the community plane shows the activity systems related to practice, learning and cognitive development and participation. The lens at the interpersonal plane shows the activity system associated with MLEs and pedagogical interactions between practitioners and children. The lens at the personal plane shows the activity system representing the child's participation in the nursery.

Engeström's (1999) description of "...multi-layered network of interconnected activity systems..." (p. 36) does not specify how the activity systems might interact and influence each other. Applying Rogoff's (1995) Three Planes of Analysis suggests that the activity systems that constitute the pedagogy could be studied independently, by applying lenses at each plane to show how they could mediate each other. A common theme from the findings in each plane was the adult role. This suggested that practitioners might determine how this happens through the interactions, actions, activities, social practices, roles and routines they create that constitute the pedagogy, including their pedagogical interactions with children and the opportunities for individual children's participation across the setting afforded by the contexts, interactions and mediation provided.

5.5.2 How might the pedagogy mediate learning and cognitive development?

Practitioners descriptions of the pedagogy in relation to learning and cognitive development within the community plane and observations of the MLEs within the interpersonal plane suggested that the pedagogy might mediate learning and cognitive development by creating environments, providing resources and pedagogical interactions that create ZPD's helping all

children to develop everyday concepts toward scientific concepts and higher psychological functions.

The findings suggested that learning and cognitive development might include concept development: the development of ‘everyday’ concepts towards ‘scientific concepts.’ For children without AN, this might be applying knowledge and understanding gained to new situations, solving problems and sharing play. This seemed to be mediated by the environment, resources and pedagogical interactions available. It included pedagogical interactions with practitioners and other children. Psychological tools, particularly language seemed to be significant to this.

For children with AN, this seemed to be developing control of cognitive functions, such as attention, perception and memory through pedagogical interactions that involve direct intervention between the child and the object or activity, described as MLE (Kozulin, 1998) This might necessitate adaptations to the pedagogy, for example, the routine, activities planned and staffing levels, as well as introducing psychological tools that could become meaningful to the child, such as PECS and Makaton. Practitioners felt that consistent approaches and routines supported learning for children with AN. The pedagogy and activities were differentiated to respond to individual needs and interests.

5.5.3 How might the pedagogy mediate inclusion in terms of participation of all children across the setting?

Practitioners’ descriptions of the pedagogy in relation to participation within the community plane and observation of children within the personal plane suggested that the pedagogy

might mediate inclusion by creating opportunities for the child to access the culture through consistent, shared routines, environments, social practices and activities that enable children to participate together. This might enable children to move from Legitimate Peripheral Participation to become full members of the community of practice (Lave and Wenger, 1999). This was supported by practitioners creating accessible environments and activities and facilitating interaction between children.

Inclusion and inclusive practice seemed to be valued by the practitioners. There seemed to be a culture of acceptance of individual differences whether according to ability or interests. Practitioners seemed to regard all children as active meaning makers (Nind, et al., 2010) with interests they wished to pursue.

Practitioners suggested that the context influenced participation and environments that allowed children the freedom to pursue their interests and learning in a flexible way and according to their needs were felt to provide opportunities for inclusion.

The pedagogy seemed to mediate inclusion by encouraging and enabling children without AN to participate in and contribute to the social practices, activities and interactions independently and by supporting children with AN to develop their participation and contribution over time. This included mediating social, affective and communicative responses.

5.5.4 How do practitioners mediate children's learning and cognitive development and their inclusion in terms of their participation?

Evidence about practitioners' role and the mediation of learning and cognitive development within the community and interpersonal planes, and evidence about their role and mediation of participation within the community and personal planes was considered. This suggested that practitioners created environments, provided resources and pedagogical interactions to mediate learning and participation. They created ZPDs for individual children and groups. Practitioners intervened directly to promote learning and participation for some children without AN and most children with AN. They created MLEs based on children's interests as the context for mediating learning and cognitive development.

Practitioners identified their primary role as supporting and facilitating learning by enabling children without AN and assisting children with additional AN. They encouraged children to become independent learners and adapted the support or mediation given to facilitate this. They supported children to engage with activities, interactions and facilitated access. They encouraged children to share the activities and help each other. They also modelled the social skills needed to participate in the setting.

Practitioners seemed to have a repertoire of mediational means they could adapt to the needs of the individual. Language was significant: using open ended questions to prompt thinking, reasoning and problem-solving for children without AN and modelling vocabulary and using specific prompts to focus attention to encourage children with AN to act on objects in conventional ways.

Although children were encouraged to learn and participate autonomously, practitioners were available to interact and intervene as felt appropriate. This included social conversations, making suggestions or modelling solutions for children without AN and direct interaction and intervention for children with AN to mediate their access and participation as well as learning and cognitive development.

Practitioners created the social practices in terms of the routines and ‘customs’ of the nursery. They mediated children’s access to the culture of the community of learners, the local community (families) and the wider community of formal education. They guided children’s activity to enable them to develop the knowledge and skills needed to participate in the wider community. For children with AN, this included developing their actions towards more conventional play (Rodriguez and Moro, 1999, cited by Van Der Veer, 2008).

5.5.5 How do practitioners’ constructs about young children’s learning and development inform the pedagogy in terms of the mediation of cognitive development and inclusion?

It was suggested that practitioners’ constructs were evident in their espoused values about learning and cognitive development and participation and realised in their practice as observed during the MLEs and children’s participation in the sessions. The interview used techniques from PCP (Fransella and Dalton, 2000) to elicit practitioners’ constructs.

Practitioners’ constructs about learning and cognitive development and participation seemed consistent with Vygotsky’s (1978) theory and the sociocultural approach to pedagogy adopted by the research.

Collaboration, teamwork and working together as a community seemed to be important constructs. Practitioners encouraged children to share and help each other, problem-solving in play or including each other. Practitioners working with children without AN described how they encouraged them to involve and include children with AN. Practitioners' responses suggested that they endeavoured to create a culture of acceptance, recognising and responding to individual differences.

The observations of the MLE suggested that activities and learning were negotiated or co-constructed between the adult and the child with the child contributing to the process as an active learner or communicator.

Children's independence as learners also seemed to be a significant construct. Practitioners encouraged and enabled children to become independent learners, following their interests. They seemed to respect children's choices. Intervention to mediate learning seemed to be negotiated explicitly or implicitly. It was recognised that independence was within the supportive context of the nursery, and practitioners were available to guide and encourage children without AN. Children without AN were expected to be relatively independent with routines and autonomous learners. Children with AN were regarded as needing a supportive, nurturing approach that ensured their basic needs were met to enable them to participate and learn. Independence for children with AN might mean spontaneously repeating an activity or action or communicating choice.

Practitioners felt learning should be fun and enjoyable. They wanted to excite and involve children in their learning. They valued children's wellbeing, as evidenced by their emphasis

on children's affective response to evaluate sessions, encouraging children's self-efficacy and autonomy and ensuring that children with AN felt comfortable, safe and secure.

Learning for adults and children was regarded as a social process. Practitioners developed their practice or 'craft' by participating with colleagues, problem-solving together, sharing practice in planning and consulting with each other. They modelled the collaborative problem-solving that they felt supported and enabled children to learn. They created MLEs that enabled children to learn with and from adults or other children for children with AN and through pedagogical interactions with practitioners for children with AN.

Practitioners seemed to value inclusion. They regarded inclusion as having benefits for all children and indicated they were committed to developing inclusive practices. Children without AN had opportunities to participate in different sociocultural contexts. Children with AN were supported to access a range of activities and interactions with others mostly in the SP or outdoors. Their participation was mediated by practitioners and sometimes, other children with support from practitioners. Practitioners seemed to value the dispositions of children without AN who interacted with children with AN, perpetuating a culture of acceptance.

Although practitioners regarded learning as led by children's interests and through play, they felt this should be balanced with opportunities created by adults that offered different learning trajectories, based on practitioners' knowledge of the culture and scientific constructs. For children without AN, it was recognised that practitioners needed to intervene to support development from 'everyday' concepts: the child's knowledge and experiences by providing

resources and creating environments that offered children opportunities to develop ‘scientific’ concepts. For children with AN, practitioners felt they needed to intervene to encourage children to engage in a wider range of activities that included non-preferred activities so that they could develop a wide repertoire of skills.

Practitioners acknowledged a tension between following children's interests to guide learning and development and introducing culturally significant experiences and concepts that children might not otherwise have access to. This suggested a recognition that practice and pedagogy needed to link with the social expectations of the wider community of learners beyond the nursery including parents and society as a whole.

5.6 Rival Explanations

Yin (2009) advocated examining rival explanations for findings when undertaking case study research. Two sources of rival explanations will be considered: alternative conceptual frameworks that might account for the findings and methodological issues that might contribute to them.

5.6.1 Alternative Conceptual Frameworks

The pedagogy in nursery was informed by the EYFS guidance (DfES, 2007) at the time. It is therefore anticipated that the findings, particularly from the interviews, might reflect this guidance and the emphasis on four themes: A Unique Child, Enabling Environments, Positive Relationships and Learning and Development. It was proposed that the EYFS guidance was consistent with and might have developed from Vygotsky's (1978) theory and a sociocultural

approach to early years education. Therefore, it is appropriate to apply conceptual frameworks developed within this approach to describe and understand the practice and pedagogy in the nursery.

The findings might also reflect the influence of other theoretical positions or pedagogical models, including schemas (Piaget, cited by Beard, 1969) and the principles of Reggio Emilia (cited by Wood and Attfield, 2005), as identified by practitioners. Wood and Attfield (2005) suggested that these approaches are not incompatible with a sociocultural approach that situates young children's play and learning in social and cultural contexts.

The findings from the research were interpreted by applying conceptual frameworks developed within a sociocultural approach from Vygotsky's (1978) theory. A limitation of using a sociocultural approach could be its relevance to contemporary practice and pedagogy in early years given the social, cultural, historical and political context within it was developed. In addition, studies that apply conceptual frameworks have tended to focus on adults in the workplace.

Rogoff's (1990, 1995) Three Planes of Analysis offers a theory of child development that could be relevant to practice and pedagogy in early years (Fleer, 2002, 2003), however, she identified difficulties with operationalising the theory in practice. Rogoff suggested applying lenses at each of three planes to overcome this, however, this necessitates a narrow focus on complex processes and social systems. This could be a limitation of the findings from this research: the processes focused on might not be representative of the social activity within each plane that mediates learning and cognitive development and inclusion.

The findings suggested that other factors might influence learning and cognitive development and participation that are not necessarily accounted for satisfactorily by the conceptual frameworks applied. Within the community plane, practitioners recognised the role of the wider community of practices influencing children's development, including families and outside agencies. It is not clear how different contexts and communities could be represented within the community plane to show their effects. Within the interpersonal plane, practitioners highlighted the wider social influences of peer mediation and the role of groups. Applying a lens to one aspect within the interpersonal plane, MLEs, albeit relevant to development, might disregard the significance of a range of social contexts and interactions for learning and cognitive development and participation. Observations relating to the personal plane focused on the child's access to and participation in activities, social practices and interactions available. It proved difficult to distinguish this from the interpersonal plane because of the fluid, dynamic nature of the social systems in nursery.

A further limitation of applying this conceptual framework is identifying how development is mediated across planes. The findings suggested that adult role might be significant to this, however, it is likely that other factors are influential and might not be evident from this research or might require complex data analysis to extract them.

CHAT was used to represent the interconnected activity systems and processes relating to learning and cognitive development and participation within each plane. The findings suggested that the mediating role of the physical environment as well as the social environment might be significant. It is unclear how this might be demonstrated using CHAT.

The findings also highlighted the significance of affective involvement as an outcome and part of the process of mediation. This is not necessarily accounted for within CHAT.

Lave and Wenger's (1999) description of participation was applied to describe the process of inclusion, however, this was developed within a workplace environment in which it could be assumed participants have some shared outcomes and trajectories for development. It might not recognise individual autonomy and the significance of independence for young children's development, highlighted by practitioners working with children with and without AN.

An alternative framework that could be applied to interpret the findings is Bronfenbrenner's (1976, 1979) ecological theory of human development. This shares similar constructs with the sociocultural approach (Wertsch, 2005). It situates development within environments, regarded as systems, focusing on the activity, role and relationships within them.

According to Bronfenbrenner (1979), development arises from the child's participation in a series of nesting systems with the child at the centre within the microsystem: the immediate setting in which the child participates (e.g. family, nursery), which in turn is within the mesosystem: other settings the child participates in; the exosystem: settings that influence development indirectly and the macrosystem: the wider social, cultural and political context, with the later introduction of a chronosystem to account for changes over time (Bronfenbrenner, 1994). Development is construed as an interaction between internal and external factors with the child's internal state: perceptions, emotions, motivation and acquired knowledge being significant.

Bronfenbrenner's (1979) theory differs from Rogoff's (1990, 1995) approach in specifically accounting for wider influences on development. It differs from the conceptual frameworks considered in its account of the role of emotions and perceptions for the trajectory of development. Wertsch (2005) suggested parallels between Vygotsky's (1978) theory and Bronfenbrenner's description, however, they differed in terms of the extent to which individual functioning is regarded as distinct from societal functioning.

Bronfenbrenner's ecological theory has been applied to early years practice and pedagogy (Fumoto et al., 2004; Odom, et al., 2004; and Shridan et al., 2011). The theory is situated within a phenomenological view of development based on Piaget's theory (Bronfenbrenner, 1979), it is therefore based on different theoretical assumptions and constructs about development than were used in the research.

An aim of the research was to demonstrate whether the complex conceptual frameworks and theoretical constructs developed from Vygotsky's (1978) theory within a sociocultural approach could be applied to practice and pedagogy in early years and EP's contribution to this. Applying Bronfenbrenner's (1979) theory would be inconsistent with this. The description of the microsystem could apply to the nursery, however, it was not felt to offer opportunities for the same detailed analysis and consideration of the mediation of learning and cognitive development and participation afforded by Rogoff's (1990, 1995) Three Planes of Analysis. Rogoff's approach could be applied to investigate the microsystem of the nursery and the findings from the research might exemplify some of the social systems and processes within it.

It is recognised that rival explanations could be invoked and considered, however, it was felt that conceptual frameworks developed from Vygotsky's (1978) theory and the sociocultural approach provided useful lenses that could be applied to describe and understand the pedagogy from a psychological perspective rather than pedagogical theory. The intention was to situate the research within the practice of EPs as applied psychologists. It is proposed that the conceptual frameworks offer various ways of representing the complex processes involved in children's learning and development and indicate how adults might facilitate this that could be useful to EP practice as suggested by Daniels (2005) and Leadbetter (2005).

5.6.2 Methodological Issues

It is also possible that the findings could be accounted for by the method chosen and methodological issues arising from this.

Practitioners suggested that experience was the most significant influence on their practice, rather than specific theories. The pedagogy might be co-constructed and therefore liable to change in response to external influences. This suggested that the findings might not be generalizable: practice and pedagogy might be situated in time and place.

The findings and interpretation might reflect researcher bias: the interests and formulations of the researcher informing the data collection and imposed on the interpretation of the raw data. The research was conducted using a 'scientific attitude' (p. 18) as advocated by Robson (2002) and endeavours made to pursue a systematic line of enquiry. The research proposed that conceptual frameworks developed from Vygotsky's (1978) theory could be applied, however, it is recognised this does not preclude other explanations and interpretations.

The research adopted a case study approach to investigate the pedagogy following Yin's (2009) guidance. This typically involves data collection from multiple sources and over a period of time to develop a rich description of the case. The time constraints and limitations of combining research with the EP professional role militated against this. Data had to be collected over a time period that was convenient for the nursery and the researcher. The findings therefore describe the nursery at a given point in time and might not be generalizable. This could be a threat to the validity of the findings.

The dual role of researcher and link EP to the nursery might have introduced bias in terms of how objective data collection and interpretation might be and in terms of the practitioners' responses. The dual roles could have been perceived as threatening to the professional relationships established with practitioners. This might have influenced the responses of the practitioners, perhaps wanting to please, or to express frustration at their experiences and the researcher, perhaps wanting to avoid being critical. There was also the possibility of a perceived power dynamic as a consequence of the relative roles. Attempts were made to reassure the practitioners about the purposes of the research: it was not an evaluation and whilst it was not Collaborative Action Research (Robson, 2002), it was hoped that the process was co-operative. It was also felt there might be a reciprocal power dynamic: the participants held the knowledge about the pedagogy and practice that the researcher hoped to have access to.

The nature of qualitative research means that the social context is constantly changing and therefore the findings are situated. It is recognised that practitioners could have responded in

ways that idealised practice. If so, this might reflect the sociocultural context. The consistency of findings within different Planes of Analysis (Rogoff, 1995) and from different data collection methods suggested that practitioners' descriptions were compatible with observed practice.

The aims and purposes of the research were shared through presentations and leaflets to inform participation and to help establish shared constructs about the nature of the research. It is recognised that the theoretical constructs might not have been understood by all those participating in the research and this could have affected the validity of the findings. The research aims were determined by the researcher for a specific purpose: to contribute to an academic qualification. This could have affected the engagement of practitioners and might be a limitation of the research.

There were issues with the sample size. The intention was to interview a small group of practitioners and follow this up with observations of MLE between the practitioners, and children they identified to work with (with appropriate consents). Requests from the Headteacher and individual practitioners meant that the sample size increased. This resulted in more data being collected within the community plane than originally intended. A benefit of this was that a wider range of views might have enhanced the identification of common themes contributing to a more realistic representation of the pedagogy within the community plane. It also preserved the anonymity and confidentiality of the participants. Where commonalities were identified, these could constitute significant and shared features of the pedagogy.

It is possible that findings within the personal plane could have been enriched had more children been 'followed' in nursery. Data collection was limited by the time available and it was not feasible to undertake further observations. The research could be regarded as a 'trial' of the approaches and validity of the conceptual frameworks as useful methods of describing and representing the pedagogy within different planes.

The children observed did not constitute a 'matched sample': they were not matched on important characteristics. Consequently, the differences observed between the experiences of the two children might be accounted for by differences other than their needs (e.g. gender). The purpose of the research was not to provide a systematic comparison of two children's experiences, but to collect data that allowed their experiences to be described and compared. The evidence of similarities between their experiences within different contexts in the nursery suggested this approach could be valid.

The research position adopted meant it was anticipated that every child's experience in nursery would be different because of differences in the sociocultural context, activities and interactions they participate in within nursery and at home.

The MLEs observed were created by the practitioners. It was unknown whether these were contrived for the purposes of the research. Practitioners were asked to identify an interaction with a child during a shared activity with the aim of supporting, extending or enhancing learning. It was requested that these should be part of the everyday routine and experiences for the child and something that they might expect to happen to minimise any distress or artificiality of the situation. Practitioners described the activities within the context of a

continuation of activities and/or repetition of familiar activities, depending on what was appropriate for the child's needs.

Data Collection Tools

Semi-structured interviews were used to collect data about the pedagogy within the community plane. The same open-ended questions were asked about practice, learning and cognitive development and participation, however, these were pursued in different ways, depending on the responses given. As a consequence, the lines of enquiry developed in different directions according to practitioners' interests or what was significant to them. The aim was to maintain a conversational style and an informal approach to enable practitioners to feel comfortable about sharing their views. The effect could have been to collect diverse data that made it difficult to identify shared or common themes. This could have affected the richness of the data and some relevant features may have been omitted as a consequence.

As a consequence of pursuing different lines of enquiry based on practitioners' responses, 'outcome' was identified as a theme for practice and learning and cognitive development, but did not appear as a theme for participation. This could affect the validity of the description of the pedagogy in relation to participation.

It is possible that variation in responses could have been attributable to the different professional roles (teachers and teaching assistants) of the practitioners interviewed. This was considered, however, it was felt that adopting an egalitarian approach that recognised the contribution of all practitioners to the pedagogy regardless of role reflected the collaborative ethos of the setting and pedagogy. It accords different professional groups equal status with

regard to the everyday practice and pedagogy and experiences of children attending the nursery. The findings suggested that differences in responses between professional groups were not as relevant as differences between the views of practitioners working with children without AN and those working with children with AN.

Adopting a more open-ended interview process was considered, however, it was felt this would be difficult to manage within the timescales. It might be too onerous for the participants in terms of the time commitment and the demands of the interview process. Focus groups were also considered, however, it was felt practitioners' responses might be motivated by a desire to conform, rather than reflecting their constructs. It was anticipated there would be practical difficulties of releasing practitioners from their duties at the same time and/or inviting practitioners to participate in their own time.

Observations used to collect data about the pedagogy within the interpersonal and personal planes involved recording within given categories. Data collection tools were devised to facilitate naturalistic observation whilst guiding recording under headings informed by the conceptual frameworks considered. This allowed consistency between observations.

Narrative observations were considered, however, it was felt this could result in a loss of data due to difficulties with observing and recording. It was hoped that imposing some structure might alleviate this. More structured observations (time sampling) were considered, however, there were concerns that the nuances of the responses might be lost.

It is possible that using the observation schedules introduced bias to the process of data collection, as well as consistency. To avoid this, categories were kept to a minimum and

coding at the data collection phase was avoided. The observation schedules devised was similar to the tools and processes adopted in professional practice and therefore familiar.

The MLEs observed were all different. As a consequence, it was difficult to identify common themes and the findings might not reflect the process. It might be appropriate to observe several MLEs over time to identify consistent approaches and practices and/or to have more than one observer with inter-observer agreement established (Robson, 2002, p. 340). This could not be achieved within the constraints of the research.

It was felt that narrative observations might produce too large a data corpus (Braun and Clarke, 2006) that might obfuscate the focus of the data collection and data could be missed. The observations were discussed with practitioners immediately afterwards to verify the validity.

The findings from following the children might have been enhanced had more than two children been involved or if several observations were made over time. This was beyond the scope of the present study.

If similar research were to be pursued in the future, it might be appropriate to involve practitioners in the data collection through Collaborative Action Research, as advocated by Edwards (2000). Practitioners could apply CHAT to record and reflect on their own and each other's pedagogical interactions. This might necessitate developing more structured data collection tools to guide recording to enhance validity.

It was felt that, on reflection, the data collecting methods selected offered opportunities to record everyday practice and pedagogy in a realistic and manageable way consistent with the aims and purpose of the research.

The validity of the findings could have been enhanced with more checking of findings with practitioners. This was embedded into the data collection. Responses to questions were summarised and reflected back to practitioners as part of the process and observations were shared and discussed with the relevant practitioners. The findings were also shared more formally with practitioners as a group. The time constraints of the research did not allow more in-depth checking/sharing of findings with practitioners.

It is recognised that the research reflects the practice and pedagogy in the nursery at a particular point in time and this is likely to change. As a consequence, attempts were made to check the data within the timeframe of data collection to reduce post-hoc analysis and changes that might arise as a consequence of reflection over time altering one's perspective and interpretation of actions in situ. In addition, as it was recognised that the pedagogy changes over time and participating in the practice of the nursery transforms those involved, it was likely that new interpretations would be offered. The purpose of the research was to investigate the pedagogy as a situated activity rather than to produce results that might generalise to other occasions.

Data Analysis

Thematic analysis (Braun and Clarke, 2006) was used to identify common themes in the data and to compare themes relating to the pedagogy for children without additional needs and the

pedagogy for children with additional needs. This required a process of reducing the data (Miles and Huberman, 1994) systematically. As a consequence, some nuances and subtleties in the data could be lost. This could affect the validity of the findings.

Thematic analysis was used to reduce the effects of bias on data analysis that might arise had the conceptual frameworks that informed the research been applied at early stages of data analysis. It is possible, however, that the process of identifying the themes might be unavoidably biased by the researcher's interests. It is recognised, therefore, that the findings might not be an objective representation of the pedagogy: they offer a subjective interpretation influenced by the conceptual frameworks considered and a subjective description of the pedagogy from the perspective of the participants and researcher. For this reason, it could be argued that the pedagogy was co-constructed by the participants, researcher and research community and therefore represents the pedagogy at a given point in its history. Thematic analysis was applied systematically across the dataset to ensure a consistent approach to enable comparisons to be made.

Other data analysis processes were attempted: the data from the MLEs was analysed using Russell's (2002) description of the elements of CHAT (Engeström, 1999). Themes identified from Rogoff's (1995) description of the interpersonal plane were applied. In both cases, it was felt that the process: the way in which the practitioners mediated learning and cognitive development was not elucidated. As a consequence, it was felt that adopting a consistent method to analyse all the data was preferable.

The conclusions from the findings will be discussed in the next chapter.

CHAPTER 6

CONCLUSIONS

6.1 Introduction

This section will describe the conclusions from the investigation into the pedagogy in a maintained nursery with provision for children with severe and complex additional needs (AN) and the mediation of cognitive development and inclusion. It will outline the conclusions in relation to the conceptual frameworks applied to investigate the pedagogy and the research questions that guided the study. It will consider the validity of the conclusions by referring to the methods used. It will suggest implications for Educational Psychologist's (EP) practice in the early years and future studies.

The aim of the research was to apply conceptual frameworks developed within a sociocultural approach from Vygotsky's (1978) theory to provide a 'rich' description of the pedagogy in relation to the mediation of cognitive development and inclusion, in terms of participation, of all children attending the setting. A further aim was to explore whether the complex theoretical constructs proposed by Vygotsky's (1978) theory and the conceptual frameworks developed from it could be applied to everyday practice and to determine whether they might be useful to EP practice.

The research adopted sociocultural definitions of pedagogy and inclusion and Vygotsky's theory (1978) to describe cognitive development. Pedagogy was regarded as co-constructed by practitioners participating in the setting as the interactions, actions, activities, social

practices, roles and routines evident. Inclusion was regarded as participation in the social practices, activities and interactions available and as influenced by the context, communities, interactions and mediation.

Vygotsky's (1978) theory situates cognitive development within the interactions between adults and children, mediated by psychological tools, material tools and artefacts. He proposed that development proceeds from actual development to potential development via a Zone of Proximal Development (ZPD). Development of 'everyday' concepts, associated with cognitive functions such as attention, memory and perception, to 'scientific concepts', associated with higher cognitive functions including problem-solving and reasoning proceeds via qualitative transformations.

It was anticipated that the research might be relevant to EP practice because EPs contribute to developing the pedagogy to meet the needs of individual children through their assessments and involvements at a systems level working with practitioners. It was suggested that if the pedagogy and mediation of children's cognitive development and inclusion could be represented using conceptual frameworks developed within a sociocultural approach these could prove useful tools for EPs to apply in practice.

Evidence from the literature suggested that learning and cognitive development and participation could be considered with reference to mediation (Wertsch, 1991), social practice (Lave and Wenger, 1999) and activity, represented as activity systems using Cultural Historical Activity Theory (CHAT) (Engeström, 1999). Constructs from these conceptual frameworks were applied to develop the data collection tools and to inform data analysis.

Rogoff's (1990, 1995) Three Planes of Analysis was used as a unifying conceptual framework to guide the data collection and analysis and the findings considered in relation to each plane. Fler (2003) suggested that lenses at each plane could be applied to analyse data and investigate issues in relation to pedagogy and practice in early years.

6.2 Conclusions in relation to Conceptual Frameworks

The research suggested that the pedagogy in the nursery could be described using conceptual frameworks developed within a sociocultural approach from Vygotsky's (1978) theory. Rogoff's (1995) Three Planes of Analysis seemed to be an effective way of representing the pedagogy within three levels: community, interpersonal and personal. The community plane seemed to correspond to the organisational level: social practices, practitioners' values or constructs, culture, routines that inform the pedagogy within the other planes. The interpersonal plane represents the pedagogical interactions that support learning and cognitive development. This included interactions between practitioners and children, described as Sustained Shared Thinking (SST) (Sylva, et al., 2004), that were regarded as Mediated Learning Experiences (MLEs) for the purposes of this study. The personal plane seemed to reflect individual children's participation in the social practices of the nursery and consequently their inclusion.

The pedagogy was investigated within each plane in relation to children without AN and children with AN. The findings indicated evidence of a common pedagogy that is differentiated to meet the needs of individual children: according to the interests of children

without AN and the developmental needs of children with AN. This seemed to be consistent with Corbett and Norwich's (2005) and Lewis and Norwich's (2007) conclusions.

Rogoff (1995) proposed that the Three Planes of Analysis could be applied to describe child development as an interconnected process occurring within and between the planes and studied by applying lenses at each plane. It was felt this conceptual framework represented the complex processes associated with the pedagogy to show how it might enable and support child development within the sociocultural context of the nursery.

6.2.1 Pedagogy within the Community Plane

The pedagogy within the community plane was described as involving everyday practice (practice within sessions), values, adult role, mediation, and outcomes in relation to practice (within the nursery), learning and cognitive development and participation. Practitioners' described learning as situated within sociocultural contexts: the activities and social practices of the nursery, within social interactions and mediated by psychological tools, material tools and artefacts. Their descriptions seemed to be consistent with the principles of Vygotsky's (1978) theory that guided the study.

Practice seemed to be co-constructed by the practitioners through collaboration with each other, parents and outside agencies involved. Practitioners' regarded their role as enabling the learning and cognitive development of children without AN and as assisting the learning and cognitive development of children with AN. They recognised differences in learning style and disposition and differentiated the pedagogy and pedagogical interactions accordingly.

Outcomes for practice and learning and cognitive development referred to the wellbeing and affective response of children.

Practitioners felt children with AN needed a nurturing, caring approach to support learning and cognitive development and to facilitate their participation. They recognised the child's right to choose to participate. Practitioners working with children without AN valued their autonomy as learners and their right to direct and guide their own learning according to their interests.

Practitioners mediated the learning and cognitive development of children without AN by providing psychological tools, such as language, together with environments, activities and resources linked to their interests and developmental needs. Practitioners mediated the learning and cognitive development of children with AN by intervening directly between the child and the object or activity to guide learning. This suggested that the pedagogy functioned to create ZPDs either through MLEs or opportunities for learning and development through play.

Participation was facilitated by the consistent routines across the setting, opportunities to share the activities together, environments that promoted shared activity and interaction and a culture of acceptance. Practitioners facilitated inclusion by inviting children to participate in activities, facilitating social interaction and enabling access for all children.

The pedagogy within the community plane was represented using CHAT (Engeström, 1999) to show activity systems for practice, learning and cognitive development and participation.

This showed the pedagogy as mediated by practitioners' values or constructs in relation to the aims they had for the session, theories and knowledge about learning and cognitive development and inclusion, as well as tools and artefacts, such as guidance relating to the Early Years Foundation Stage (EYFS). Rules were based on the practitioners' knowledge of individual children and guided differentiation of the activities and the environment. The division of labour described the adult role determined by the developmental needs of the child: enabling or assisting. The outcome reflected expectations for progress and wellbeing, suggesting that the pedagogy supported holistic development.

Similarities between the activity systems suggested common features of the pedagogy that might be differentiated for the needs of individual children. Practitioners indicated that their role differed in response to the needs of the child, however, their responses suggested this might be fluidly defined and that they adapted their role in response to individual needs rather than the needs of a group of children.

It was suggested that the pedagogy could be regarded as a complex, dynamic activity system, represented using CHAT (Engeström, 1999) to show the interaction of factors that might influence it. It is possible that contradictions within the pedagogy activity system produce transformations over time. Contradictions might arise from external changes, such as changes in policy and internal developments emerging from reflective practice. This suggested that representing the pedagogy within the community plane using CHAT might allow the effect of organisational change to be explored and evaluated.

6.2.2 Pedagogy within the Interpersonal Plane

The pedagogy within the interpersonal plane was studied by focusing on MLEs between practitioners and children with and without AN. It was suggested these were similar to SSTs, identified as features of pedagogy in effective settings (Sylva, et al., 2004). The pedagogy within the interpersonal plane involved activity, adult role, mediation, child's response, situation definition and learning and cognitive development. It was proposed that the process observed during the MLEs was similar to the movement through the ZPD (Vygotsky, 1978).

Qualitative differences in mediational means observed suggested that mediation might be adapted to the needs and responses of individual children. The activities chosen seemed culturally significant: associated with curriculum knowledge for children without AN and developing learner behaviours and conventional play for children with AN.

Practitioners seemed to have a range of mediational means (Wertsch, 1991) at their disposal, however, language as a psychological tool seemed to be the most consistent and significant mediational means for children with and without AN. This finding was consistent with Vygotsky's (1978, 1986) theory. For children without AN, language was used to guide and develop problem-solving and thinking: higher cognitive functions. For children with AN, language was used to prompt and develop attention, memory, and perception: lower cognitive functions. It was used to develop effective learner behaviours (e.g. focused attention), systematic actions on objects and conventional play.

Language and other mediational means functioned to create a shared, inter-psychological space between the practitioner and child that enabled the practitioner to mediate development

of the child's everyday concepts: knowledge and understanding gained for children without AN; undifferentiated play and exploration for children with AN, towards scientific concepts: applying knowledge to problem solve, transferring knowledge to new situations for children without AN; forming meaningful associations for children with AN.

Although there were qualitative differences in the activity, mediation observed and cognitive development of individual children, it was felt there was evidence of a continuum of similar types of mediation (e.g. language) differentiated according to the needs and learning style of individual children. This was shown diagrammatically as an interaction between mediational means and concept development to indicate the implications for cognitive development.

Wertsch's (1984) description of development through the ZPD seemed to describe the processes observed during the MLE. Adults and children need to share the situation definition: have a shared understanding of the purposes of the activity; in order to achieve intersubjectivity (share the activity) to provide the context for mediation of learning. Children without AN were observed to sustain the shared situation definition, working towards the adult's goal or purpose for the activity, then pursuing their own activity. This suggested evidence for graduated participation (Rogoff and Gardner, 1999) where the responsibility for learning transfers from the adult to the child. A shared situation definition seemed to be transient for children with AN, limiting opportunities for further development. The role of intersubjectivity for cognitive development was shown diagrammatically based on Fleer's (2010) Pedagogical Model.

It was proposed that MLEs describe development through the ZPD mediated by adults. This was represented as activity systems using CHAT (Engeström, 1999) for children with and without AN. Practitioners mediated learning using a range of mediational means, including language, tools and artefacts and specific prompts based on the needs of the child. The rules described how the shared situation definition develops. The division of labour described learning transferring from the adult to the child: from the inter-psychological to the intra-psychological (Vygotsky, 1978), in a process similar to graduated participation.

This was developed further as interconnected activity systems based on Cole's (1996) diagram showing the transfer of control of the activity from the adult to the child and the transformation of cognitive functions from the inter- to the intra-psychological. Adult mediation of the child's actions transforms their interpretation of the activity and situation definition. The process of achieving a shared situation definition was represented using Engeström's (1999) Third Generation to show how a new object: the shared situation definition develops.

6.2.3 Pedagogy within the Personal Plane

The focus for the pedagogy within the personal plane was the participation of children with and without AN in terms of the routine, context, activity, relative roles of the adult and child and interactions within sessions. Differences in participation were observed. The child without AN seemed relatively autonomous and could access activities and follow routines independently. The child with AN seemed dependent on adult mediation of access to activities, social practices and interactions.

Reference was made to Lave and Wenger's (1999) description of participation in communities of practice to interpret these observations. This suggested that the child without AN might participate as a 'full' member of the community of practice. The participation of the child with AN seemed to be mediated by the practitioner in the role of 'master' (Lave and Wenger, 1999) and could be described as 'legitimate peripheral participation' (Lave and Wenger, 1999). The mediation focused on meeting basic needs and developing communication skills and social interaction, regarded as necessary to facilitate full participation.

It was suggested that the extent to which practices and activities are shared by all children determines their participation in the sociocultural context of the setting and the community of practice.

Participation was shown as an activity system using CHAT (Engeström, 1999) for mediation of participation in the nursery. The rules referred to the extent to which the routines, activities and access facilitated participation and the division of labour referred to the relative roles of the adult and child and the shift in the child's contribution to the community of practices through graduated participation.

Both children were regarded as active participants in the nursery and as contributing to the social practices through their activities and interactions with others, however, the extent to which this happened seemed to depend on the needs of the child. This suggested that sociocultural factors, such as the social practices, interactions, constructs of adults and children might enable or restrict participation over time for children with AN.

6.2.4 Pedagogy as an Interconnected Network of Activity Systems

The pedagogy was summarised using Rogoff's (1995) Three Planes of Analysis to show the different levels of pedagogy observed and CHAT (Engeström, 1999) to show the interconnected activity systems within each plane and to suggest mediation between the planes. It is recognised that the activity systems within each plane also mediate activity in other planes, creating an interconnected pedagogy that reflects the interconnected nature of development as described by Rogoff (1995, 2003).

The research focused on the role of the adult in creating and realising the pedagogy. The significance of this was confirmed, consistent with the findings of the EPPE project (Sylva et al., 2004). It was proposed that the adult role: the ways in which the practitioners create the pedagogy through the activities, actions, interactions, social practices, roles and their facilitation of all children's participation in the context and community of practice might mediate the pedagogy in terms of learning and cognitive development and inclusion across and within the three planes.

6.3 Conclusions in relation to Research Questions

The research demonstrated the value of the conceptual frameworks developed from Vygotsky's (1978) theory to describe and represent the pedagogy in a maintained nursery with provision for children with AN. Rogoff's (1995) Three Planes of Analysis proved to be a unifying conceptual framework allowing the pedagogy within each plane to be explored, whilst suggesting the mediating effects of the pedagogy within and between planes. CHAT (Engeström, 1999) was used to represent the pedagogy within each plane and to suggest the

inter-relatedness of the planes by describing the pedagogy as a network of interconnected activity systems. Principles from Vygotsky's (1978) theory and MLE could describe and explain cognitive development within the community plane and interpersonal plane. Lave and Wenger's (1999) description of participation in social practices proved a useful framework for exploring inclusion and the extent to which individual children might be included in the setting within the personal plane.

The pedagogy seemed to mediate learning and cognitive development and children's participation by providing a sociocultural context conducive to this and creating ZPDs for all children. For children without AN, ZPDs seemed to be created by the environment, resources, activities, and interactions as well adult intervention through MLEs. For children with AN, ZPDs were created through MLEs that reflected the child's developmental needs and interests. Inclusion, in terms of participation seemed to be determined by practitioners' constructs about individual children's development and the accessibility of the environment, activities, resources and social practices. Practitioners mediated the participation of children with AN.

Practitioners created ZPDs to support cognitive development using their knowledge and understanding of the child. This was co-constructed through collaborative activity that involved the wider community of practice: parents and outside agencies. They also created the social practices, routines and 'customs' in nursery that mediated access to the culture and participation of all children. Their constructs about learning and cognitive development and inclusion determined how accessible these were and the extent to which children with AN could participate independently and contribute to the community of practice. Practitioners

endeavoured to create a culture of acceptance. A guiding construct for the pedagogy was that children learn through play with others.

6.4 Methodological Issues

The research findings related to a particular sociocultural context: the pedagogy in the nursery studied that was regarded as a microculture (Van Oers, 2008). The findings are not necessarily generalizable to other contexts, however, they might have implications for other settings.

The research focused on a particular sample of practitioners and children. This was not consistent between the three planes. This could have affected the validity of the conclusions reached. Observation of MLEs between all the practitioners interviewed and children and following these children in nursery would increase the sample size, produce consistent findings and contribute to robust conclusions about the pedagogy. This could not be achieved within the constraints of the research.

The research used techniques from PCP (Fransella and Dalton, 2000) to elicit practitioners' constructs about the pedagogy. This could be developed by eliciting constructs at the outset from a group of practitioners or documents related to the pedagogy and asking practitioners to indicate the extent to these might be consistent with their practice.

More in depth data collection over a longer period of time might have enhanced the validity of the findings. This would have provided information about the transformations over time

that might indicate links between the planes and the ways in which learning and cognitive development and inclusion is transformed.

Involving practitioners in the data collection through Collaborative Action Research or realistic evaluation (Robson, 2002) might have also contributed to more robust findings and conclusions, as would eliciting the views of parents/carers and children to represent the influence of the wider community of practice on the pedagogy.

Future research could focus on developing data collection tools based on CHAT (Engeström, 1999) to explore the pedagogy within each plane and to identify the mediators between planes. These tools might be useful for EP practice, particularly assessment and intervention and involvement at a systems level.

6.5 Implications for EP Practice

Representing the pedagogy on three planes, corresponding to Rogoff's (1995) Three Plane of Analysis and applying CHAT (Engeström, 1999) along with principles from Vygotsky's (1978) theory to operationalise the practices, activities and interactions within each plane contextualises the child's experiences in the setting and might provide a useful model to guide and support EP assessment practice in early years.

Rogoff's (1990, 1995) Three Planes of Analysis could be applied to guide the practice of EPs in early years at three levels, corresponding to those suggested by Dennis (2003, 2004), focusing on collaboration with practitioners to implement and evaluate interventions for

children with AN (Robinson and Dunsmuir, 2010) and develop practice and pedagogy for all children.

Within the community plane, this could include systems level work developing inclusive policy and practice using the findings from this research to evaluate current practice and inform developments. As part of this policy, the findings could also inform development of individualised pedagogies that respond to individual needs by recognising and developing mediational means within and between the planes recognising the significance of pedagogical interactions to inclusive pedagogy.

Within the interpersonal plane, this could include consultations with practitioners using CHAT (Engeström, 1999) to represent MLEs, and by extension, SSTs to support reflective practice, enabling practitioners to identify contextual factors that might influence learning and inclusion, as well as effective mediational means. An approach such as Reflective Dialogues (Moyle, et al., 2002) could be used. It could also include training to raise awareness of the conditions for effective mediation of learning and cognitive development, including processes and contextual factors that enable shared situation definition, intersubjectivity, mediation and guided participation.

Practice within the personal plane might include casework and EPs developing their assessment practice away from direct intervention to assess young children's learning and cognitive development towards structured observations that collect information about the mediational effects of the pedagogy and pedagogical interactions within all three planes. Assessments could focus on the child's access to and participation in activities and

interactions within the personal plane, including child initiated learning; MLEs between practitioners and children focusing on the mediational means used, the contextual factors and the effects of mediation within the interpersonal plane and the wider sociocultural context of the pedagogy within the community plane, including practices, roles, values, environments, resources, activities and shared outcomes. The themes identified from this research could guide data collection and the conceptual frameworks applied, particularly CHAT (Engeström, 1999), could inform interpretation. This might provide information about actual and potential development and inform differentiation of the pedagogy and pedagogical interactions to support the learning and cognitive development and inclusion of children with AN.

CHAT (Engeström, 1999) could be used as a tool to represent the MLE to guide data collection that focuses on how practitioners mediate learning and cognitive development for children with AN. The mediational means, rules and division of labour observed could inform interventions and the differentiation of the pedagogy at an individual level to promote inclusion.

EPs could use CHAT to represent MLEs, and by extension, SSTs, to facilitate practitioners' reflective practice to support development at a systems level. The findings from the research could inform policy and practice concerned with developing inclusive pedagogies in early years settings. This could be a particular consideration for settings including vulnerable children.

6.6 Personal Reflections

This research has informed my practice as an EP working in early years, particularly assessments of the strengths and needs of children with AN in context. Practitioners highlighted the significance of ‘knowing the child’ to intervene effectively to support learning and cognitive development. This situates assessment and intervention within the interactions between those who know the child best (practitioners, caregivers) and the child, rather than within the interaction between the EP and the child, suggesting that observations of pedagogical interactions and MLE might inform authentic assessments (Linder, 1990; Bagnato, et al., 1997).

Observations also need to recognise the mediating effects of the pedagogy within and between all three planes: community, interpersonal and personal to inform effective interventions and differentiation by recording information about the environment, activities, resources, practices, interactions, adult role and mediation to describe the contextual factors influencing development. Observations are recorded to reflect the interaction between the child and the context, noting the child’s interaction with the environment, objects and others.

Observations of MLEs focus on the extent to which the conditions facilitate mediation, the situation definition is shared and intersubjectivity (joint attention) is established as well as the mediational means used. The child’s responses as well as the practitioners’ actions are recorded to indicate the extent to which cognitive functions, such as memory, attention and perception are under voluntary control and the shift in responsibility for the activity achieved through guided participation. This informs conclusions about the extent to which the information processing required for the child with AN to engage with the task with adult

support might inhibit or enable development of higher cognitive functions necessary to develop conceptual understanding and recall procedures and facts (Bøttcher, 2011). This informs interventions and differentiation of activities, mediation and contexts that recognise the child's learning style.

The findings from the interviews suggested that practitioners might share constructs about learning and cognitive development with EPs, however, EPs might have access to psychological theories and models, for example, conceptual frameworks developed within a sociocultural approach, to frame practitioners' observations to inform practice and pedagogy that effectively supports learning and cognitive development and inclusion. This suggests the value of a consultative and collaborative approach in early years.

An example of this was the practitioners' constructs about learning and cognitive development that enabled the development of scientific concepts, assumed to be fact-based knowledge, to be expanded to include development of a scientific approach, emerging from observation of properties and functions of objects for children with AN to hypothesising and predicting for children without AN.

The findings from the research have significantly developed my knowledge and understanding of learning and cognitive development, particularly for children with AN, and informed my understanding of potential barriers to and facilitators of this. It has enabled me to adopt a reflective approach, working collaboratively and consultatively with practitioners and caregivers to understand the learning style, strengths and needs of children with AN and to develop observation techniques that contextualise this to inform individualised pedagogies.

The sociocultural approach developed from Vygotsky's (1978) theory, particularly Rogoff's (1990, 1995) Three Planes of Analysis, has proved to be significant and valuable to my everyday practice as an EP. Hopefully the findings from this research will make a useful contribution to EP practice more widely.

6.7 Future Developments

Future research could focus on exploring the propositions from this research and whether they apply to other contexts and settings. It could focus on developing data collection tools based on CHAT (Engeström, 1999) to further enhance consistency in data collection across the planes. It could explore rival explanations to test the validity of findings.

Further research is needed to demonstrate the interconnections between activity systems in relation to pedagogy and cognitive development. This could be achieved through longitudinal studies during which the transformations might be observed.

Research in EP practice could focus on the practical implications of the findings and whether assessment tools can be developed based on CHAT (Engeström, 1999) and applied in practice. These could focus on the mediation of cognitive development to clarify the processes involved and inform interventions tailored to the needs of the child.

The conceptual frameworks considered, particularly CHAT and Lave and Wenger's (1999) description of participation in social practices could be used to evaluate and inform policy and practice in relation to inclusive pedagogies in early years settings.

6.8 Summary

The research demonstrated the legacy and value of Vygotsky's (1978) theory and conceptual frameworks developed from it for practice and pedagogy in early years education, particularly in relation to cognitive development and participation of all children, and to EP practice collaborating with practitioners to understand the complex processes involved. The research suggested that the complex constructs associated with the sociocultural approach and conceptual frameworks developed from Vygotsky's theory can be usefully applied to describe everyday practice and pedagogy and to inform EP practice, as suggested by Leadbetter (2005).

Pedagogy is a complex dynamic construct that could be represented by the conceptual frameworks developed within a sociocultural approach, particularly Rogoff's (1995) Three Planes of Analysis and CHAT (Engeström, 1999) to provide a rich description of the pedagogy and the mediation of cognitive development and inclusion. The conceptual frameworks considered provided a meaningful way of representing and understanding the processes involved that could inform interventions to secure improved outcomes for children in early years.

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APPENDIX A: DATA COLLECTION TOOL: INTERVIEW

Interview with Practitioners

A General Questions

1. What is your role in the nursery?
2. What qualifications and experience do you have to equip you for this role? (highest relevant)
3. How long have you worked in early years education? (years/months)
4. How long have you worked at this setting?
5. What areas of early years education are you particularly interested in?
6. Do you work mostly with children with or without additional needs?
7. Do you work mostly with: all children? Some children (groups) or individual children?
8. How old are they?

B Practices

Tell me about a typical session in the nursery. What usually happens?

C Learning and Cognitive Development

1. What do you know about young children's learning and cognitive development?
2. What activities in nursery support/enable young children's learning and development?
3. How do you support the learning and cognitive development of the children that you work with through your interactions with them during shared activities?
Think of a situation when you have worked with a child and supported them to learn something new/learn a new skill/ develop a new understanding by sharing an activity with them and helping them.

D Participation

1. How are children helped to participate in activities and social contexts (groups) across the nursery?
2. What do you do to help the children that you work with most so that they **can** participate in activities and social contexts across the nursery?

E Future Developments

1. How would you enhance children's learning and cognitive development? What would you do differently?
2. How would you enhance children's participation across the setting? What would you do differently?

F Closure

Is there anything that you would like to add?

Is there anything that you would like to ask?

APPENDIX B: DATA COLLECTION TOOL: OBSERVATIONS

Observation: MLE

| Time | Activity: | Mediation: | Outcome: | Learning and Development: |
|------|-----------------|------------|----------|---------------------------|
| | Object: | | | |
| | Action: | | | |
| | Roles: | | | |
| | Social Context: | | | |

Observation: Following Child

| | | |
|-------|-------------|--------------|
| Date: | Start time: | Finish time: |
|-------|-------------|--------------|

| | | |
|-------------------------------------|----------|---------------|
| | Actions: | Interactions: |
| Activity: | | |
| Materials/tools/resources: books | | |
| Context: | | |

APPENDIX C: SAMPLE LETTERS

Letter to Parents: MLE

Dear Parents,

I am employed by the Local Authority and I am the link Educational Psychologist to the setting. I have an enhanced CRB check. I am studying for a professional doctorate in Educational Psychology at the University of Birmingham. I need to carry out a substantial piece of research as part of my doctorate, and the nursery have kindly allowed me to research the ways in which adults working in the nursery support the learning and development of all children in their care. This will help us to understand the ways in which we can help young children to learn.

As part of this research, (name of practitioner) has kindly allowed me to observe her working with a child on a shared activity and the things that she does to help the child learn. She has chosen to work with your child, and I am writing to you to ask you for your permission to observe your child working with (name of practitioner). The activity will take place in the nursery, and will be the same or similar to activities that your child usually does whilst they are in nursery, and the support your child usually gets. This is to ensure that your child does not feel that anything different is happening from what usually happens in nursery. The observations will last for as long as your child wants to do the activity. Every step will be taken to ensure your child is enjoying the activity and feels it is just like any other session in nursery.

During the observations, I will record what (name) does to help your child learn and develop, and your child's response to this. The observations will be written down, however, I would like to make an audio recording of the language that (name) used to support learning. I will need your permission to do this.

No personal details will be recorded about your child. The information collected from the observations will be recorded anonymously and treated as confidential. The information collected will be stored securely and will not be available to others. I will share the findings from the observations with you in a letter and a report will be provided to the nursery. You have the right to withdraw from this research at any time for whatever reason. Please contact me if you wish to withdraw after you have signed the form.

The information will be submitted as part of my thesis to the University of Birmingham. No information will be included that would allow others to identify your child, the adults in the nursery, the nursery or its location.

Thank you for agreeing to take part in this part of my research and allowing me to observe an interaction between (name) and your child during a shared activity that supports your child's cognitive development (e.g. puzzle). I would be grateful if you would sign the enclosed form for you to give permission for the observations to go ahead.

Please do not hesitate to contact me if you would like to discuss my research further and your child's involvement in it.

Yours faithfully,

Letter to Parents: Following Child

Dear Parents,

Thank you for allowing me to observe your child working with (name of practitioner) and the ways in which (name) supported your child's learning. It was very useful.

I am contacting you again to ask for your permission to 'follow' your child in nursery. This will involve observing your child and watching what he/she does in nursery during a typical session. Information will be recorded about what your child does in nursery, the play and activities, the time spent on these activities and the interactions between your child and others in nursery. The data collected will give me a picture of the sorts of experiences that your child has in nursery and how these might contribute to his/her learning and development.

No names or personal details about your child or other people will be recorded and there will be no direct contact with your child for the purposes of the research. The information collected will be recorded anonymously, treated as confidential and stored securely. It will be used as part of my research study to help me to understand how adults in the nursery support children's learning and development through the activities and interactions that they provide. The information collected will be included in my thesis.

As before, you have the right to withdraw on behalf of your child. Please contact me if you wish to do so.

Please fill in and sign the attached consent form if you are happy for me to observe what your child does in nursery and with whom.

I am very grateful for your support and co-operation. Please do not hesitate to contact me if you wish to discuss your child's involvement in my research further.

I look forward to hearing from you soon,

Yours faithfully,

APPENDIX D: CONSENT FORMS

Interviews

I agree to take part in the interviews conducted as part of the data collection towards Alison Brown's professional doctorate at the University of Birmingham.

I understand that the information will be recorded anonymously, treated as confidential and stored securely.

I understand that I have the right to withdraw. This has been explained to me.

The purposes of the research and how the information will be used has been explained to me.

Signed: _____ Date: _____

Print Name: _____

I agree to the interview being recorded using a voice recorder and understand that the recording will be stored securely and treated as confidential.

Signed: _____ Date: _____

Print Name: _____

Observation of MLE - Parent

I agree to Alison Brown, Educational Psychologist, observing (name of practitioner) working with my child to support his/her learning and development during a shared activity. I understand that Alison will observe what the (name of practitioner) does to support my child's learning and my child's response to this. I understand that this will involve making written notes and could involve an audio recording of what is said. I understand that the data collected will be shared with me at a later date. I understand that the information collected will form part of the thesis submitted data towards the professional doctorate in Educational Psychology at the University of Birmingham.

I understand that the information will be recorded anonymously, treated as confidential and stored securely.

I understand that I have the right to withdraw on behalf of my child. This has been explained to me.

I have been given information about the purposes of the research and how the information will be used.

Signed: _____ Date: _____

Print Name: _____

On behalf of:

Name of child: _____

I agree to the MLE being recorded using a voice recorder to collect samples of the language used. I understand that the recording will be stored securely and treated as confidential.

Signed: _____ Date: _____

Print Name: _____

On behalf of:

Name of child: _____

APPENDIX E: EXCERPTS FROM INTERVIEWS AND OBSERVATIONS

Interview with Practitioners

These excerpts from interviews are provided to illustrate typical responses from practitioners working in mainstream or the special provision in the nursery. Roles are not indicated to protect the anonymity and confidentiality of practitioners. Excerpts have been shortened to be illustrative: practitioners tended to develop their responses fully either spontaneously or in response to prompts following on from their response.

Responses to questions about experience and future developments are not given to protect anonymity and confidentiality.

B Practices

1 Tell me about a typical session in the nursery. What usually happens?

Mainstream:

“Well, the children, as the children come in, there’s somebody on the main entrance doing the Register. The other members of staff are around the room to be in contact if any parents want to speak or anything to welcome everybody.

The door will be opened so that children can go outside as soon as they’ve found their name and written it if they’re up to writing or make the mark on paper.

And they do that for about three quarters of an hour now. Because we’ve started waiting a little bit longer for children who tend to arrive late. Then we’ll join together in a circle time or a mini group. We divide off into four groups then.

And that’s for, well it can be for anything between five minutes or three quarters of an hour, depending on what you’re doing. It’s when we say hello to everybody, the children count, we go through the days of the week and then they maybe PSE activities going on or a maths activity, something specific.

And then we’ll ask the children where they’re going to play before they all disappear. And then the doors open and its free choice.

Snack’s available from the end of that period for them to go and get it whatever time they want to.

And you can be based either insider or outside.

Like today, like I’ve been baking so I’ve been inside, but, I could have been quite easily doing me gardening so I’d be outside or just generally being with the children outside.

And then we tidy up and we, again we get together but only into two groups this time where there’s a story and there’s very often a rhyme time. And then it’s, somebody goes onto the door to let the parents in. some children go back to the private provider. We then clear up, have some lunch and start all over again.

And it’s the same routine.

Just with a new set of children.”

Special Provision:

“...A typical session is that the children arrive during the first 30 to 45 minute of the nursery day. .. And they’re given the opportunity to explore the activities available, selecting the things that are interesting to them. Adults are there to support them and.. to develop their skills. But really that initial period is a time for them to settle in, and to get used to the routine and..the transition really that’s the first main transition of their day..

At about 9:30, so, 1.15 in the afternoon, we do a hello time. This is a more structured period of the session. We sit together with all the teaching assistant and all the children in that specific group.

...Following the hello time, we usually move on to an outdoors experience. So again the children initially are encouraged to explore what appeals to them, but then adults will direct them to activities that perhaps they wouldn’t usually choose themselves just with the aim of developing a variety of their skills really rather than letting them always focus on the same things.

...they’ll go into the larger outdoor area where they’ll engage more and be part of a larger group so will include children from the mainstream room as well which are the mainstream children but also some other children with additional needs who are also supported.

So we’ll come back inside and we’ll sit at the table for snack.

.. the children will wash their hand initially and that’s part of their routine. And then we will offer them a drink and they’ll ask for what they would like using their own method of communication, so again it might be through picture exchange it might be through a gesture, using Makaton, it might be by speaking.

Following snack we will typically either go to the multisensory room, or the dance studio or perhaps to the library. The multisensory room can be either a calm space or it can be quite a lively space depending on how we’ve set that up for the day really.

And then typically parents will arrive and that’s the time that children are handing back to parents and we usually have got the opportunity of discussing how the session has gone.”

What do you see your role in the session? What’s your role?

Mainstream:

“Well it’s to observe and to enable and to take learning on.”

Special Provision:

“My role would be to work with individual children as and when to be with and interact with children as and when was appropriate.”

“In an afternoon, it’s different again.

I’m very based around the medical side of it. So I support a little boy again pretty much on a one-to-one because of his medical needs. And obviously, this little boy has oxygen and other things He’s quite complex. I’m based around that. And I spend a lot of time looking at what I could do with him to extend his learning and his sensory side and we do a lot of work on in the light room with his vision. And we do a lot of work on tactile things, so we ... I let him

explore treasure baskets and other things like that and do physical side, standing frames, a bit of physiotherapy we do in the afternoon.”

At the end of the session, how do you know it's a good session? How do you know it's been successful?

Mainstream:

“I think that children, first of all, for most I think that if they're happy, they go home happy. ... I think you get a sense of you feel that you've achieved something yourself. And if there's been sort of, sometimes, if there's been an outcome. There doesn't always have to be an outcome.

Is there anything else?

When you can see the progression by looking at, you know if you've done observations and if you look back sort of previous observations and see how their learning has moved forward by the different activities that they've been involved in.”

Special Provision:

“If the children are happy and settled and appear to enjoy the session. Either verbally communicate that they've enjoyed it or facial expressions: smiling. It's nice to pass over to the parents anything that they've achieved that day. Just small, tiny steps mean an awful lot to most of these parents and children.

So just something simple like, you know, they've actually sat down quite calmly for snack or even just good looking. It's, you know, I mean, invaluable to inform the parents these small things are happening.²

C Learning and Cognitive Development

2. What do you know about young children's learning and cognitive development?

Mainstream

“Well, I've come to appreciate that for young children, obviously learning is best done through play and also it is best done through their interests. Some children's interests can be really fleeting and so I think it's recognising, as a teacher, its recognising which interests are worth developing in deeper or whether we need to introduce an interest to the children to take their learning on.

Regards to problem solving, sometimes I think you have, I think you, again it's a balancing act between stepping back and not interfering in their problem solving and that can be from children having disputes with each other to working out how to get the water from one end of a place to another and working as a group.

Because I think that giving them the answer is, is very short-term. And that by problem solving, it becomes more like sticky learning, it's something they'll remember and the learning becomes more meaningful because it's in context and it's something they've worked out. Whereas if you give them the answer, tomorrow they've forgotten that.

And it's also, it's also the children learning from each other as well. It's not always about the teachers, or the teaching staff providing them with resources which might lead them to some answers. It's encouraging.

So yeah, it's about learning from your peers as well."

Special Provision:

"I think they learn through play. I mean it is very different because I think most of the children that we work with, I think they do learn something each time, but they don't necessarily show that, that they've gained a skill or they've learnt something from that activity and especially a lot on children on the spectrum as well, they have a lot of skills, but don't actually display those skills till later on so we could always assume, oh they've not done that, they've not been interested, let's not do it again, whereas actually they could have learnt a skills but they don't actually want to show that skill. So it is quite difficulty. I think that particularly with the children we need to be quite repetitive in what we do and always revisit an activity and always adapt an activity so that we know that, in case they've not quite got there you know they can revisit the activity to gain the skill or if they have got that skill we can always adapt it and extend it so their learning could go on further.

I think every child's different. You know every single child with additional or without are different and how they learn are different again. And I don't think there's any same a group of children or any two children learn the same. They have, they might be developing at the same stage, but I think every child takes something in different, every child's either a visual learner or whatever else and I think everybody takes it in a little bit different but they could show in an activity, say for example, the baking, they might take it all in different but they might show something different in the activity and I think it works the same for children with additional needs as well. I think you know they can take it in different depending on what the stage they're at and how they display that as well, depending on their physical ability."

2. What activities in nursery support/enable young children's learning and development?

Mainstream:

"The Forest School. I think it's the fact that it's a very hands on experience. ... Again, the fact that they're given the time ... to develop their own learning there. Another example of the Forest School is a little girl that's interested in small world princesses and dragons, and over about a period of four weeks, she developed and designed houses and castles for them with different resources. And the first week it was quite a simple structure. And they we encouraged her, again we didn't sort of tell her what to use, we said, could you use anything else for your house. She looked around for natural resources and gradually developed the house. It was quite complex at the end. She'd used moss for carpets, she had little bits of wood that she broke up for chairs and to sit on, she used pine cones to decorate it to make it look pretty. And then once she'd sort of was quite happy with her structure, she then decided it would need food and she then moved away to use mud to make chocolate cake. She left them all outside the fairies house. So it was nice that each week she could revisit that activity. Nobody stopped her. Some children came and helped her, then they wandered off. She was quite happy to do that. But she was able to develop her ideas over the six weeks."

Special Provision

“Lot of ... water play. And that can be extended from just exploring the water, splashing the water to filling and emptying to transferring the water. And that could be extended outside to the water feature by using the pump.

And obviously sand play as well. They’re very basic for children with additional needs and I think their learning is extended each day with what we can provide or what they can show.

All areas of provision extend their learning, and I think it’s, how it’s set up and to what we observe to what we can keep providing and keep enhancing.”

3. How do you support the learning and cognitive development of the children that you work with through your interactions with them during shared activities?

Think of a situation when you have worked with a child and supported them to learn something new/learn a new skill/ develop a new understanding by sharing an activity with them and helping them.

Mainstream:

“... Well, for example, I had a little boy who was very into building castles. And, they were kind of quite random buildings, so, I went to the library and got lots of books on castles and we had a look at how castles were really built. I also showed him if he made a floor for his castle first of all and built his wall around the castle, it became kind of less sprawling and random. So it’s kind of, its observing the child again, listening to what the child is saying and seeing what, it, and its questioning the child as well, cos they may have ideas and theories about things. And also then finding the resources. It might be like using something as a reference point, like books or pictures. Or it could be providing resources which will add to what you’ve observed and taking their learning on. But it’s not just about observing and providing things, it is about involving the children in that process, so remembering to ask them questions and trying things out and saying to them, even though I might know the answer to something. So for example, a drawbridge. I might know how a drawbridge works. But it’s saying to the child, I wonder how a drawbridge works? Let’s have a look at a picture. Oh. I wonder if we did such and such, do you think that might work? Or if we did this, do you think that might work.

And even if the thing the child comes up with is way off beam, its allowing, not saying, oh not that’s not going to work. It’s allowing them to try it and examine why that did not solve the problem, why that did not work. And then its identifying there may be a skill you need to teach them. So for example, if their cutting skills aren’t great. Then it’s identifying that you perhaps need to do a bit of input on cutting or how to use certain tools, it might be you know how to use the hole punch.”

Special Provision:

“Okay, painting activity or mark making activity whatever you’d like to call it. Had a child in our afternoon session who was very reluctant to put things like paint and wet or moist things on his hand on his fingers.

So we had an afternoon where we had paint on the table. He sat alongside me and I squirted some paint onto the table using a couple of different colours. And I began to use my finger, my fingers to swirl the paint, the spots of paint, the blobs of paint, around onto the table, making marks. I then did things like, squeezing my hands together, you know, like this (demonstrates action) putting, putting, making spots on table using lots of sounds, saying

‘ooh, look’ ‘swish’ and ‘round’, ‘round and round.’ Making lots of sounds, different sounds and noises and ‘splat’ banging my hand on the table.

He watched for quite a significant amount of time, I’m talking only minutes but a significant amount of time for him. He still didn’t touch any of the paint that I’d touched. So I put some off my hand onto his hand. And he explored that. For a while.

His face, his expression on his face showed that he wasn’t really very impressed. He didn’t like it. But as the minute went by and I continued to make marks with the paint and swirled it round, he actually put his hand on the table. And didn’t copy, but he, didn’t copy what I was doing but he actually put his hand into the paint on to the table.

We repeated that activity. Not necessarily just using paint, but we had things like shaving foam and gloop, making the same sort of patterns, using the same sort of language but with a slightly different material and texture and eventually, he began to explore in his way, the materials.

So I felt by working alongside him, and encouraging him to participate and letting him see what was going on, that he, he eventuallybegan toexplore independently.”

“I think usually I would ... sort of try and encourage them to become involved with something that I knew would appeal to them initially.. in order to ensure their attention really and their involvement and their willingness to take part. And then, .. just sort of have a calm approach really and what what appropriate for some children it would be a calm approach because to be too, sort of, loud and would be a turn off for them, but then for others that would be the way to engage them so its about knowing your specific child and how best to meet their needs and as I said before I would probably initially model How they might become involved or I may copy what they’re doing as a way of engaging their interest really....

It’s about being in tune with the child really and how best to respond to them. And I think it’s about short but repeated experiences you know so if you wanted to develop their ability to complete an inset puzzle and one day they managed to just sit there and touch the board initially, that may be enough, the next day they might take the pieces out or even just one of the pieces out. And it’s about very small steps really, building towards ...greater skills and confidence. So it may take three months but if in that period of time they’ve become used to sitting down, taking the pieces out and replacing just a few then that’s a major achievement and it’s about not expecting too much too soon.

So small steps really and encouragement in an appropriate way.”

D Participation

1. How are children helped to participate in activities and social contexts (groups) across the nursery?

Mainstream:

“Well in terms of routine, there is an expectation of sometimes you will be sat in a larger group and sometimes you will be sat in a smaller family group. So there are some expectations they’re not that a child is ever forced to. If they’re not happy sat in group to start with you know we’ll, somebody will sit out with them until they feel ready. We do at least, set, set an expectation.

..So, there are certain social boundaries, if, if you like. And an expectation to that. Other than that, in terms of their play and their learning, as I've said we take that on a very individual basis. And sometimes we do group them if we know the children would be happy and it was a relevant thing to do.

But some children, as I've said, it might take them nearly the whole year to get to the point of wanting to play and being able to play with other children and that's fine."

Special Provision:

"I think ... We try to engage them in all that's available, really. We plan for all the different areas of learning and plan to meet all the variety of different skills that we'd like children to achieve and we just steadily introduce each of the children to those at their own level.

Some may choose to become involved in certain activities repetitively. You know, some children are obsessed by the water or absolutely love the role play area so that's where they always choose to go. But I think we are aware of each child, what they prefer and what they try to avoid and part of our role I feel is to, not force them, but encourage them to encounter things that aren't their preference. We do that ... in a careful way, a sensitive way, ... and I think there's a difference between encouraging and forcing. So it could be that you know they can't bear the paint and to get them to the table where the paint is would just be too traumatic. So it might be about us taking just a tiny amount of paint to them, where they are, which is a comfortable space for them. As a starting point.

It's just taking things at a slow pace really. But working towards .. steadily towards a target."

2. What do you do to help the children that you work with most so that they **can** participate in activities and social contexts across the nursery?

Mainstream:

"..I find out as much as I can about all the children here, so that if I come across them,.. I'm aware of them and what their need may or may not be and what is a good idea for them and what might not be a good idea for them in terms of need.

...And I do make big efforts that way to get to know as many children as possible from, and that's (other group) of children, (special provision) of children.... Visiting children that I perhaps don't see very often.

And just encouraging interaction really. I am quite proactive in encouraging interaction where I see it about to happen."

"The children from this is the angle I'm doing it from, then we would, keep saying that child's name you know. X has come to play, he's at the playdough table. And try and highlight X a bit. And ... encourage them perhaps, you know, to be sharing things or giving him things. And try and help them, help those children to include that child in their play and to acknowledge even if the child's working alongside which obviously most of the time the child will be, that they or you know if they're in the house, helping the children in mainstream to accept and help them to facilitate that child to be included in their play.

Anything else?

I just want to say as well, in highlighting the special things that child does in that play."

Special Provision:

"I had an example of a child in a chair, and the other children were rolling a ball down the guttering and running to catch it. So I took the child to the guttering. And the child had

physical difficulties that limited their hand movements, but encouraged the other children to play alongside and help her to push the ball down then the able children ran to get the ball, retrieve it for her, pass it along, talk about the colours of the ball, help her to say, 'ready, steady, go.' So that type of inclusion where you have got your limitations, you just try and adapt and involve the child to play with her peers."

Excerpt from observation of MLE in Mainstream:

| Time | Activity: | Mediation: | Outcome: | Learning and Development: |
|-------|---------------------------------|---|--|--|
| 10.20 | Object: | ‘in a pickle’ describe tape wrapped around itself | ‘in a pickle’ ad attention to what happened (tape entwined) | Colloquial phrase: cultural reference Social ease |
| | Box | | | |
| | Tape | Assist cut – hold tape straight for ch | Ch cut – scissors ‘I can see a little bit there look I can see a bit’ | Ch formulates problem |
| | | ‘you can see a little bit can’t you?’ | | |
| | Action: | | | |
| | Tape on window | ‘get inside, test it’ | Ch climbs in | Hypothesis testing |
| | | ‘does it work?’ ‘does it work your window?’ | ‘Only a little bit’ | |
| | | ‘Why doesn’t it work? Why can’t you see through?’ | ‘look’ talk about window | Questions to formulate problem enable thinking Focus on problem |
| | | ‘Is it because of the tape?’ | ‘Yes’ | Ad identifies the problem |
| | Roles: Ch lead ad assist | (ch does not respond immediately to question – time to reflect, consider – response time) | | |

| | | | | |
|--|---------------------------|--|--|--|
| | Social Context: 1:2 | | | |
|--|---------------------------|--|--|--|

Excerpt from observation of MLE in Special Provision:

| Time | Activity: | Mediation: | Outcome: | Learning and Development: |
|------|--|---|--|---------------------------|
| 8.55 | Object: Stars water | What can you see? Can you see stars (Makaton and word)? | Moves bowl | |
| | | I'm going to put a star in a dish | Look at | Notice/discriminate star |
| | | Can you put in the star? | Distracted. | Engage with activity |
| | Action: Find stars Notice and respond | Shall we catch the stars? Fills the pot with beaker. Sing: this is the way... | Take beaker off and empty | Fill and empty |
| | | Repeat song: this is the way we catch the stars.. K model action fill and pour | Move bowl in water. Look at and touch star. | |
| | Roles: Adult leads Child follows | K point to star | Looks at | |
| | | Pick up hole up star 'look' | Pick up put down | Discrimination |
| | | How many? Count them. Model count. | Vocalise after number | Count. Number vocabulary. |

| | | | | |
|--|------------------------|--------------------------------------|---------------|--|
| | Social Context: 1:1 | Can we find more (sign) stars (sign) | | Discrimination Count Maintain interest |
| | | Shall we pick them up? | Picks them up | Prompted action |
| | | Offer bowl to put them in | Put in bowl | Fine motor Pincer grip |

Excerpt from observation of MLE in Special Provision:

| Time | Activity: | Mediation: | Outcome: | Learning and Development: |
|------|--------------------------------------|---|--|--|
| 1.36 | Object: Oats | Warn re: oats on hand. Set up activity. Describe activity. Label. Explore sensory. | | |
| | | Put to nose | Turn head to Move head and eyes towards | Notice and respond |
| | | Sprinkle on hand | | |
| | Action: Exploration | ‘tickle, tickle’ | Lift head | |
| | | ‘tickle, tickle’ | | |
| | | Lift up in hand to sprinkle | Look up | Move to bring items into visual field. Notice and respond. |
| | | Hand over hand to open fingers. ‘open them up’ ‘not close them’ | Lift head. Eye contact | |
| | | ‘good boy’ | Movement (slight) of arm | Affirm action |
| | Roles: Ad leads Ad facilitates | ‘good boy. Good moving finger’ | | |
| | | Side to side. | Arms (slight) raise arm | |

| | | | | |
|--|---------------------------|--|--------------|---|
| | and assists | 'good moving' | | Affirm action |
| | | 'where's the porridge, S?' | Turn to look | Notice and look for. Awareness porridge exists. Bring into visual field. |
| | Social Context: 1:1 | 'good boy. Good finding.' 'where's it gone?' Lift head Adjust position Warn first. 'where's the porridge?' 'Can you see it?' Can you feel it? | | Extend understanding of immediate environment. Widen frame of reference/visual field. Perceptual field. Awareness of senses. |

APPENDIX F: PRESENTATION TO THE NURSERY: SCREENSHOT & RESEARCH REPORT

Pedagogy in Nursery – Microsoft PowerPoint non-commercial use

File Home Insert Design Transitions Animations Slide Show Review View Add-Ins

Clipboard Cut Copy Paste Format Painter New Slide Layout Reset Section Slides

Font Paragraph Drawing Shape Fill Shape Outline Shape Effects Find Replace Select Editing

Pedagogy in Nursery: Mediation of Learning and Cognitive Development and Inclusion
Presentation of Key Findings
Alison Brown

Research

- Case study
- Information about the pedagogy from:
 - interviews with practitioners
 - observations of pedagogical interactions described as 'mediated learning experiences' (MLEs) (Koslin, 1998)
 - observations of free children's play and experiences in nursery during one session
- Information was collected about the experiences of children without AN and parents additional needs (children without AN) attending the mainstream provision and children with AN attending the mainstream provision with support and attending the special provision
- Data collection and analysis were informed by the sociocultural research

Research Aims

- To provide a rich description (Theodorou and Nind, 2010) of the pedagogy, pedagogical interactions and inclusion in terms of participation.
- To explore whether the conceptual framework: the theories and models developed from Vygotsky's (1978) theory within a sociocultural approach could be applied to describe the pedagogy and the relevance this might have for pedagogy and practice in EY education and the role and contribution of Educational Psychologists (EP) to EY education, particularly in relation to assessment practice.

Pedagogy

- EPPE (Sylvia et al., 2004): significant finding was role of adult and SFTs
- Tickell (2011) clarified SFTs by referring to Vygotsky's (1978) description of learning and development.
- Dynamic process (Leach and Moon, 2008)

Definition used:

- Dynamic and transforming: it changes over time as a consequence of the various influences on the practices of those participating in the setting.
- Situated within the interactions, actions, activities, social practices, roles and routines of those who participate in the nursery.
- Realised within the pedagogical interactions between adults and children.
- Mediating learning and cognitive development and inclusion in terms of participation

Inclusion

- Social constructionist view of disability.
- Sociocultural definition focuses on participation.
- Booth and Ainscow (2004) inclusion should increase participation of all.

Definition used:

- Participation in the social practices created by the pedagogy.
- Influenced by the context, community, interactions between members of the community and mediation available.

Learning and Cognitive Development

Vygotsky's (1978) Theory:

- Social nature of learning
- Mediation
- Concept development
- Zone of Proximal Development (ZPD)

Sociocultural Approach

- Mediation (Wertsch, 1991; Koslin, 1998)
- Participation in social practice (Lave and Wenger, 1991, 1999)
- Interpersonal: CHAT (Engeström, 1999)

Rogoff's (1998) Three Planes of Analysis

- Community: individuals participating in socially and culturally organised activities that support development.
- Interpersonal: involves learning with and from others.
- Personal: process of change arising from participation in sociocultural activity.

Data Collection

- Community Plane: interviews with practitioners (teachers and teaching assistants) working with children with/without AN in mainstream or special provision.
- Interpersonal Plane: observation of MLE
- Personal Plane: following two children: one with AN and one without AN

Community

- Everyday practice
- Values
- Adult Role
- Mediation
- Outcome

Everyday Practice

- Shared routines and practices.
- Routines adapted to needs of individual: encourage children without AN to be independent: children with AN were supported to follow
- Activity adapted to meet the needs and interests of individual.
- Medical and developmental needs informed differentiation.
- Activities could be adapted to be inclusive.
- Barriers to participation included: staff ratios & access
- Participation and choice for children with AN.

Values

- Children as independent learners.
- Learning as social process.
- Balance: interested, child initiated and adults intervening to support learning.
- Children without AN autonomous; children with AN assisted.
- Role of environment.
- Participation benefits all.
- Facilitated by environment, access, resources.
- Caring dispositions of children without AN.

Adult Role

- Support and facilitate learning.
- Meet developmental and basic needs of children with AN.
- Encourage independence and autonomy.
- Create environments and provide resources to support learning and cognitive development.
- Enhance participation by facilitating interactions.
- Support, enable and reassure children with AN as well as mediating access and learning.

Mediation

- Described MLEs: intervene between child and object.
- EPPE, planning, EPS, reports mediate practice.
- Range of mediational means.
- Common mediational means and differentiated to needs of child.
- Tools: language, modelling, prompts.
- Qualitative differences: children with AN need higher level of mediation; more intense.
- Practitioners create ZPD.
- Mediate development of social skills and communication for children with AN.

Outcome

- Positive affect and emotional response: happy and calm.
- Progress: children without AN actively involved in planning next session; children with AN willing to engage with or repeat activities.

Interpersonal Plane

- Activity characteristics
- Adult role
- Mediation
- Child responses
- Situation definition
- Learning and cognitive development

Activity Characteristics

- Significant to culture: books, model of house, conventional play.
- Create ZPDs
- Develop problem-solving and reasoning skills for children without AN; conventional play and goal directed actions children with AN.

Adult Role

- Co-construct activity with child: learning conversation.
- Support and guide learning: children without AN - problem-solving and reasoning; children with AN - focus attention, develop memory and perception.
- Develop psychological functions: higher for children without AN; lower for children with AN.

Mediation

- Qualitative differences.
- Language significant.
- Used to model and develop thinking and reasoning with children without AN.
- Used to prompt, focus and guide responses of children with AN.
- Feature of interaction between adult and child with AN.
- Used frequently and in combination with children with AN.

Child Response

- Active learners: engaged with activity.
- Children without AN shared activity and initiated own learning.
- Children with AN shared joint attention briefly then resumed own activity.
- Needed significant prompts and guidance to share activity with adult.

Situation Definition

- Children without AN shared situation definition with adult: do activity together. Adult can mediate learning.
- Children with AN shared joint attention briefly: adult mediates joint attention to provide context for learning.

Learning and Cognitive Development

- Develop 'scientific approach'.
- Children without AN: problem-solving, reasoning, thinking, scientific concepts, curriculum-based skills.
- Children with AN: attention control, noticing significant information, memory: recall actions modelled.
- MLE mediate social skills, communication and affective involvement of children with AN.

Personal Plane

- Routine
- Context
- Activity
- Child role
- Adult role
- Interactions

Next Steps

- Interpretation of findings in relation to theory and research questions.
- Research report – provide further details about research and findings.

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**An Investigation into the Pedagogy in Nursery using Sociocultural
Approaches to Explore Mediation of Learning and Cognitive Development
and Inclusion:**

Research Report to the Nursery

Based on the thesis submitted to the University of Birmingham in part fulfilment
of the degree of
Professional Doctorate in Educational Psychology (EdPsychD)

Alison Brown
Educational Psychologist

1 Introduction

This report will provide an overview of the research conducted in the nursery. It will describe aspects of the theory that informed the research and the data collection. It will present the key findings and discuss their relevance for practice and pedagogy. It will suggest some conclusions and implications for future development.

The research focused on the pedagogy in the nursery and the mediation of learning and cognitive development for all children and their inclusion in terms of their participation in the activities and interactions available. It particularly focused on the pedagogy in relation to children with severe and complex needs attending the special provision and the ways in which this might be differentiated to reflect the strengths and needs of this group of children and to enhance their participation. Of particular interest was the ways in which adults support young children's learning. The nursery was selected because practice and pedagogy were judged to be 'outstanding' from a recent OFSTED inspection (HMI, 2010).

The significance of pedagogy in Early Years education has been recognised in recent developments in Government policy and guidance, including the review of the Early Years Foundation Stage (EYFS) (Tickell, 2011) and associated developments (DfE, 2012). Developments in pedagogy and practice were informed by the findings of the Effective Provision of Pre-School Education (EPPE) Project (Sylva, et al. 2004). There is a wide body of research and literature relating to pedagogy and Early Years (EY) education. This research applied conceptual frameworks developed from Vygotsky's (1978) theory of learning and cognitive development within a sociocultural approach.

The research assumed that all children learn through social interaction with others and in social environments. This was felt to be significant for children with severe and complex additional needs who need support and guidance from adults to make sense of their experiences and form meaningful associations that support cognitive development. It assumed that the role of the adult and the pedagogical interactions (Siraj-Blatchford, et al., 2002; McInnes et al., 2011) between adults and children to mediate learning and development were significant to the pedagogy in the nursery. This was demonstrated from the findings of the EPPE project (Sylva, et al., 2004) and emphasised in the Tickell Review (Tickell, 2011).

The research developed from EP involvement with the nursery over time: providing assessments of children's strengths and needs to inform provision, including Statutory Assessment (SEN: Code of Practice, DfES, 2001) and contributing to an inclusion project that helped to develop shared practices and routines across the nursery. This prompted an interest in the pedagogy across the nursery in terms of whether this was common, differentiated according to the needs of groups of children (e.g. children with severe and complex needs) or distinct for individual children. Corbett and Norwich (2005) and Lewis and Norwich (2007) suggested that inclusive pedagogy is both common to all and distinct to recognise the needs of individual children.

The research used a case study approach, collecting information about the pedagogy from interviews with practitioners, observations of pedagogical interactions described as Mediated Learning Experiences (MLE) (Kozulin, 1998) and observations of two children's play and

experiences in nursery during one session. Information was collected about the experiences of children without severe and complex additional needs (children without AN) attending the mainstream provision and children with severe and complex additional needs (children with AN) attending the mainstream provision with support and attending the special provision. Data collection and analysis were informed by the sociocultural approach.

The aim of the research was to provide a ‘rich description’ (Theodorou and Nind, 2010) of the pedagogy, pedagogical interactions and inclusion in terms of participation. A further aim was to explore whether the conceptual frameworks: the theories and models developed from Vygotsky’s (1978) theory within a sociocultural approach could be applied to describe the pedagogy and the relevance this might have for pedagogy and practice in EY education and the role and contribution of Educational Psychologist’s (EP) to EY education, particularly in relation to assessment practice.

This report contains the following sections:

- **Theoretical Basis of the Research**
- **Data Collection and Analysis**
- **Findings**
- **Summary of Key Findings**
- **Discussion of Findings**
- **Conclusions**

The next section will provide a brief overview of the theoretical basis for the research: the theories and conceptual frameworks that guided the research including data collection, analysis and interpretation of the findings.

2 Theoretical Basis of the Research

2.1 Introduction

This section will provide an overview of the literature that informed the research.

The research focused on the pedagogy in the nursery in terms of the mediation of learning and cognitive development and inclusion. It used a sociocultural approach to define pedagogy, learning and cognitive development and inclusion based on previous studies. The sociocultural approach developed from Vygotsky's (1978) theory of learning and cognitive development. It was used to consider learning in terms of mediation (Wertsch, 1984; Kozulin, 1998), participation (Lave and Wenger, 1991, 1998) and activity. The sociocultural approach was developed by Engeström (199) as Cultural Historical Activity Theory (CHAT).

2.2 Pedagogy

The EPPE project (Sylva et al., 2004) was a large-scale, longitudinal study that collected information about practice and pedagogy in effective settings to identify links with long-term outcomes for learning and development. Effective settings were identified from OFSTED judgments, along with other criteria. The nursery could be regarded as an effective setting.

A significant finding was that the role of adults and their interactions with children were significant to children's learning and development through play. Sylva et al (2004) found that 'Sustained Shared Thinking' (SST) was a feature of effective settings, defined as:

“By this we mean an episode in which two or more individuals “work together” in an intellectual way to solve a problem, clarify a concept, evaluate activities, extend a narrative etc. Both parties must contribute to the thinking and it must develop and extend thinking.” (Sylva et al, 2004, p.36).

This suggested pedagogy and learning and cognitive development could be regarded as situated in the pedagogical interactions between adults and children within the learning environment of the nursery.

The Practice Guidance for the EYFS (DfES, 2007) was developed from the findings of the EPPE project. The review of the EYFS (Tickell, 2011) reinforced the significance of adult-child interactions:

“The provision of meaningful interactions between adults and children to guide new learning is an essential element of the EYFS.” (Tickell, 2011. p. 29)

Dame Tickell (2011) clarified the role of adults by referring to Vygotsky's (1978) description of learning and development through mediation:

“A definition I have found very helpful describes this support as the difference between what a child can do on their own, and what they can do when guided by someone else – either an adult or more able child.” (Tickell, 2011, p. 29)

This suggested that Vygotsky's (1978) theory and developments from it within a sociocultural approach are relevant to the study of contemporary practice and pedagogy in EY.

Leach and Moon (2008) adopted a sociocultural approach to define and describe EY pedagogy. They highlighted the complex, interactive, multidimensional qualities of pedagogy in their definition:

“...dynamic process informed by theories, beliefs and dialogues only realised in the daily interaction of learners and teachers in real settings.” (Leach and Moon, 2008, p. 6)

This suggested that the pedagogy might be evident from practitioners' views and observations of everyday practice and pedagogical interactions within the nursery.

The research used a sociocultural definition of pedagogy based on Vygotsky's (1978) theory of learning and development and informed by the findings of the EPPE project and Leach and Moon's (2008) definition. This recognises that pedagogy changes in response to internal influences (e.g. those who participate in the nursery: practitioners, parents and children) and external influences (e.g. Government policy and guidance) and is, therefore, situated in place and time. The research focused on the pedagogy in the nursery at a given point in its history and the wider sociocultural history of EY education.

| |
|---|
| Definition of Pedagogy: |
| Pedagogy was regarded as: <ul style="list-style-type: none">• Dynamic and transforming: it changes over time as a consequence of the various influences on the practices of those participating in the setting.• Situated within the interactions, actions, activities, social practices, roles and routines of those who participate in the nursery.• Realised within the pedagogical interactions between adults and children.• Mediating learning and cognitive development and inclusion in terms of participation |

It was proposed that information about the pedagogy could be collected from:

- Interviews with practitioners.
- Observation of everyday practice during typical sessions in the nursery.
- Observations of everyday pedagogical interactions between practitioners and children in the nursery.
- Observations of children's experiences in nursery during typical sessions.

2.3 Inclusion

The research adopted a social constructionist view of disability to inform the definition of inclusion used:

"The social constructionist model sees disability as not so much the result of a person's impairment, but as a product of social factors in the context in which s/he

participates that create barriers and limits opportunities for equal participation." (Alton-Lee, et al., 2005, p. 99).

Definitions of inclusion in the literature highlight the significance of participation (Booth, 1999; Ainscow, et al., 2000; Jarrett, 1996; Moran and Abbott, 2002; Booth and Ainscow, 2004). Participation could be regarded as a sociocultural construct: it is associated with factors in the learning environment that might enable or prevent participation in the practices and pedagogy. This could include social practices such as routines, access to the environment and resources, and interactions with practitioners and other children.

Booth and Ainscow (2004) inclusion should focus on increasing the participation of all. They defined participation as:

"Participation implies learning, playing and working in collaboration with others." (Booth and Ainscow, 2004, p. 3).

The definition of inclusion used in the research was developed within a sociocultural approach to inclusion, as advocated by Flynn (2005) and based on definitions from the research literature.

| |
|--|
| Definition of Inclusion: |
| Inclusion was regarded as: <ul style="list-style-type: none">• Participation in the social practices created by the pedagogy.• Influenced by the context, community, interactions between members of the community and mediation available. |

This definition recognises the significance of relationships and interactions between teachers and children (Corbett and Norwich, 2005); the significance of play (Theodorou and Nind, 2010) and the significance of practitioners' views of learners, including regarding disabled children as 'active meaning makers' (p. 653) (Nind, et al., 2010).

Florian and Black-Hawkin (2011) suggested that practitioners' knowledge, attitudes and beliefs about learners and learning and observing the 'craft' of the teacher will be significant when describing inclusive pedagogy.

This suggested that information about participation for children with and without AN in the nursery could be collected from interviews with practitioners to elicit their constructs about practices, learning and cognitive development and inclusion and from observations in the setting.

2.4 Learning and Cognitive Development: Vygotsky's (1978) Theory

The definition of cognition used in the research was based on Hayward and Lidz's (2007) definition.

| |
|--|
| Definition of Cognition: |
| Cognition was regarded as: <ul style="list-style-type: none">• Acquired and modifiable;• Arising from the interaction between ability, motivation, habits and attitudes;• Developing through interaction, direct teaching and mediation. |

This definition implies that all children have the capacity to learn and develop.

Vygotsky's (1978) theory of cognitive development informed the research. This regards learning and development as socially, culturally and historically situated (Daniels, 2005). The child learns what is culturally relevant to the society in which they participate at a given point in time. In EY education, this could include the knowledge, skills and understanding needed to learn in school.

The research was based on the following principles of Vygotsky's (1978) theory:

- **Social nature of learning.**
- **Mediation.**
- **Concept development.**
- **Zone of Proximal Development (ZPD).**

Social Nature of Learning

Learning occurs within the interactions between a child and a more competent learner. This could be a practitioner or other children in nursery. Vygotsky described this as:

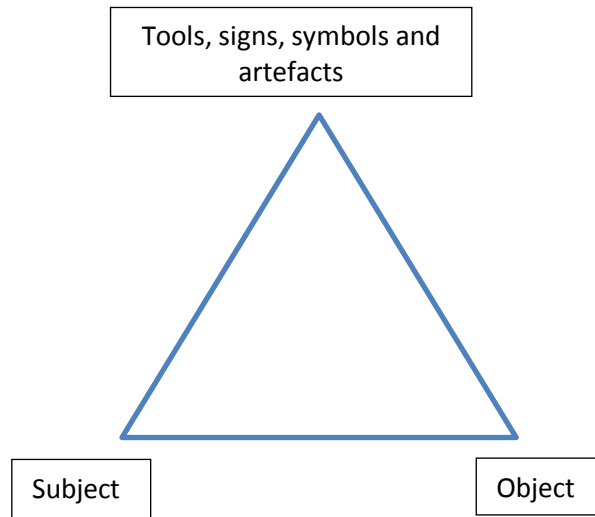
“Every function in the child's cultural development appears twice: first on the social level, and later, on the individual level; first, between people (interpsychological) and then inside the child (intrapsychological).” (Vygotsky, 1978, p.57)

Mediation

Learning is mediated by:

- Material tools (i.e. objects);
- Psychological tools (e.g. language);
- Symbols (e.g. written language);
- Artefacts (e.g. books, pictures).

This was shown as:



Mediation might also include the ways in which the adults support and enhance learning: teaching, guidance, modelling, prompts and cues, as well as the language and resources used.

Mediation might be differentiated according to the needs of the child.

Example 1: Differentiation of Mediation

Two children, one with AN and one without AN were playing with jelly in a tray. A practitioner supported them. The practitioner mediated learning by:

- Using simple language to prompt and guide the actions of the child with AN and to model labels for actions (press, push, squeeze);
- Using open-ended questions to encourage the child without AN to describe the jelly and predict what might happen as a consequence of different actions on the jelly and what the jelly could be used for.

Language was differentiated to mediate next-step learning:

- To encourage exploration and develop vocabulary for the child with AN;
- To encourage problem-solving and using language for thinking and reasoning for the child without AN.

Concept Development

Vygotsky proposed that lower psychological functions are transformed into higher psychological functions through mediation. Mediation by language is significant to this.

| Lower Psychological Functions (Kozulin, 1998; Daniels, 2001) | Higher Psychological Functions (Wertsch, 1991; Flear, 2010) |
|--|--|
| Reflexes Simple conscious responses Spontaneous responses Attention Perception Memory | Thinking Voluntary attention Logical memory Problem-solving |

The responses of many children with AN suggest prevalence of lower psychological functions: they respond to sensory stimulation (perception), they show brief attention and they need help to recall sequences and routines (memory). Mediation is therefore significant to their cognitive development.

The responses of children without AN suggest that higher psychological functions are developing and becoming increasingly sophisticated. They focus on activities for different lengths of time, they can recall facts and events, they can think, reason and problem-solve and share this with others.

Vygotsky (1986) also described the development of the child's spontaneous (everyday) concepts into scientific concepts through 'systematic cooperation' (p. 148) between the adult and child. 'Everyday' and 'scientific' concepts were defined as:

| Everyday Concepts | Scientific Concepts |
|---|--|
| Unsystematic and unconscious (Kozulin 1998) Spontaneously acquired from immediate social, practical activity (Daniels, 2005) Develop from children's natural learning through encounters with objects and activities at home and in preschool (Flear, 2010) | Organised hierarchically, reflect cultural models of thinking (Kozulin, 1986). Develop through formal education, generalizable and under voluntary control (Daniels, 2005) Socially and culturally mediated through interactions with others (Flear, 2010) |

Everyday concepts could refer to the learning that children come into nursery with. For children with AN, this might be typified by unsystematic and unconscious (Kozulin, 1998) responses, such as exploring in sensory play. For children without AN, the 'formal' education offered by the environment, activities, resources and interactions in nursery enhance development of scientific concepts: systematically organised knowledge and understanding of concepts to enable children to develop the knowledge and skills necessary to access the curriculum and participate in teaching and learning in school.

Example 2: Development of Everyday Concepts into Scientific Concepts through Mediated Play: Child with AN

A child plays with an inset puzzle. At first she explores the properties of the puzzle pieces by banging them together for sensory feedback. A 'everyday' understanding might develop.

A practitioner introduces new ways of using the pieces. She models fitting a piece into its outline and makes this significant for the child by using an auditory cue 'pop.' The child notices and copies the action. Through repetition of this activity shared with the adult and mediation from the adult, the child discovers new, scientific concepts about shape and size that enables her to match puzzle pieces accurately and fluently.

Higher psychological functions such as associated with matching (perception), noticing similarities (attention) and problem-solving might develop.

Rodriguez and Moro (1999, cited by Van Der Veer, 2008) described this process as development from non-conventional use of objects (banging puzzle pieces) to pre-conventional (putting pieces on top of the puzzle) then conventional use (completing the puzzle).

Example 3: Development of Everyday Concepts into Scientific Concepts through Mediated Play: Child without AN

A child completes a number inset puzzle, matching numbers to their outline in a random order. This demonstrates his 'everyday' understanding of visual matching.

A practitioner intervenes and encourages the child to replace the pieces in number sequence. The child develops scientific concepts relating to sequencing and order that could be extended through other mediated activities and play.

Higher psychological functions associated with problem-solving and logical thinking might develop.

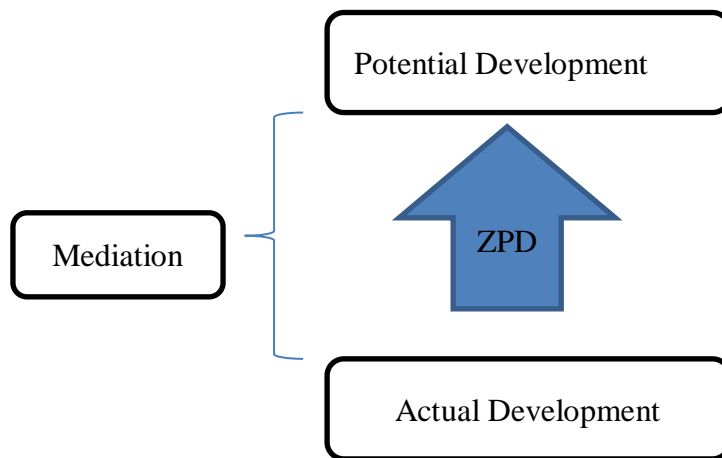
Zone of Proximal Development

Vygotsky (1978) described the Zone of Proximal Development (ZPD) as:

"It is the distance between the actual development level as determined by independent problem-solving and the level of potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers." (Vygotsky, 1978, *Mind in Society*, p.86)

This definition was referred to by Tickell (2011) to describe clarify the role of adults in EY education.

The ZPD is regarded as the space between what the child can do alone: their actual development, and what they can do with support from adults or more competent peers: their potential development.



Descriptions of learning through the ZPD highlight the following:

The adult has a more developed understanding of the potential learning opportunities within a given play situation than the child.

The adult guides the child towards these by:

- Helping the child to notice what is significant (Anning and Edwards, 1999, 2004);
- Sharing the same view of the situation or situation definition (Wertsch, 1984);
- Recognising the child's understanding of the situation and goals for learning (Griffin and Cole, 1984; Hedegaard, 1995; Fleer, 2010).

It was suggested these could be features of the pedagogical interactions in the nursery and might be observed in the interactions between adults and children, particularly during shared learning activities.

Wertsch (1984) suggested this process might involve:

- Situation definition: the adult and child represent the same task differently. For example, the child sees a puzzle as something to explore; the adult recognises its problem-solving properties and learning potential.
- Intersubjectivity: the adult guides the child so that the child relinquishes their situation definition in favour of the adult's. The adult and child share the same situation definition: they have a shared outcome for the activity.
- Semiotic mediation: Wertsch emphasised the role of language and communication (including gesture) to the negotiation of the intersubjective situation definitions to achieve a shared representation of the task, i.e. a shared understanding of the task characteristics.

Example applying Wertsch's (1984) Description of Learning and Development through the ZPD to Mark Making

A child explores mark making on paper with a pencil. The adult models drawing circles and adding features.

Situation definition: task represented differently. Child: exploring; adult: representational drawing.

The adult mediates by drawing a circle and prompting the child to add features. She labels the features and talks about the drawing. The child adds features. The adult and child share the activity.

Situation definition: shared. Child and adult sharing the activity: drawing a face. Intersubjectivity negotiated by the child joining in with the adult's activity and mediated by the prompts given and the language used to label features, making the task meaningful to the child.

2.5 Sociocultural Approach

The sociocultural approach developed from Vygotsky's (1978) theory of mediated learning. The research considered the conceptual frameworks developed from Vygotsky's (1978) theory in terms of the learning process emphasised:

- **Mediation (Wertsch, 1991; Kozulin, 1998)**
- **Participation in social practice (Lave and Wenger, 1991, 1999)**
- **Activity: Cultural Historical Activity Theory (CHAT) (Engeström, 1999)**

Mediation is relevant to practice and pedagogy in EY education. It is implied in the definition of SST (Sylva, et al. 2004) and referred to in Tickell's (2011) description of the adult role.

Inclusion was regarded as participation in social practices because participation is a common feature of definitions of inclusion in the literature. It was felt that descriptions of the process of participation (Lave and Wenger, 1991, 1999) might be useful to explore the mediation of inclusion.

The pedagogy and practice in the nursery could be regarded as an activity, as could the pedagogical interactions. Activity describes people working on something towards an outcome. In CHAT, this is mediated by tools and artefacts, the community, divisions of labour and rules.

Learning through Mediation

Kozulin (1998) developed the concept of mediation. He suggested that the ZPD described by Vygotsky was similar to Mediated Learning Experience (MLE), described by Feuerstein (cited). MLE was described as:

“MLE is a special quality of mediated interaction between the child and environmental stimuli. This quality is achieved by the interposition of an initiated and intentional adult “between” the stimuli of the environment and the child.” (Kozulin, 1998, p. 65).

This description of mediation seemed consistent with the description of SST developed by Sylva et al (2004) and the ways in which adults help children to learn through play in EY education.

Kozulin suggested that a MLE is defined by:

- Intentionality/reciprocity – the adult makes the object or activity meaningful to the child and seeks to elicit responses that might indicate development.
- Transcendence - this refers to other learning additional to the immediate experience, including transmission of culture. This could include learning social norms and expectations associated with turn-taking during a counting activity.
- Meaning - the adult makes experiences meaningful to the child, often at an emotional level, distinguishing it from other experiences.

It was proposed that MLE could be used to represent and describe pedagogical interactions in nursery. It was anticipated that the following mediational means, identified from previous studies, might be observed in the pedagogical interactions between practitioners and children:

| | Klein (2000) | Lidz (2002, 2003) | Isman and Tzuriel (2008) |
|------------------------|--|---|--|
| Mediational Behaviours | Focusing Affecting Encouraging Expanding Regulation of behaviour. Identified that focusing behaviours were used more frequently with special populations. | Intent Meaning Transcendence Task regulation Psychological differentiation Praise/ encouragement Change Challenge Joint regard Sharing Contingent responsivity Affective involvement | Intentionality and reciprocity. Mediation of meaning. Mediation of transcendence. Mediation of feelings of competence. Control of behaviour. |

Examples of MLE in Nursery

A child explores a pop-up toy. The adult observes the child's investigation of the toy. The adult intervenes between the child and the toy (object) to show the child how to turn a handle to make the toy pop-up.

The adult mediates learning by:

- Prompting the child to look at the action (focusing).
- Cheering when the toy pops up (affecting)
- Prompting the child to keep turning the handle (encouraging)
- Introducing a new toy to the child with a similar action (expanding).

An adult introduces an animal matching game. She sets out the cards on the table and invites the child to join in.

The adult mediates learning by:

- She says to the child, 'Look, you like animals. Let's see if we can find some that are the same.' The child agrees. (intentionality and reciprocity)
- The adult explains how to play the game and prompts the child to take turns (task regulation)
- They share the activity together (joint regard).
- She helps the child to find animals that are the same (mediation of meaning)
- She invites other children to join the game and prompts the child to take turns (mediation of transcendence).
- She praises the child when he finds a match (mediation of feelings of competence).

Learning through Participation

Lave and Wenger (1999) described a process of participation in a 'community of practice' (p. 98) as moving from 'legitimate peripheral participation' (p. 29): joining the community at the edges, learning the practices, language and activities to full participation when the child contributes to the practices.

Lave and Wenger (1999) described a community of practices as:

"A community of practice is a set of relations among persons, activity and world, over time and relations with other tangential and overlapping communities."
(Lave and Wenger, 1999, p. 98).

The nursery could be regarded as a community of practices as it is a set of relations among practitioners, children and their families and links to the wider communities of practice associated with the local community, local authority and EY education.

Lave and Wenger's description could be applied to describe a child starting nursery and learning the routines and 'how to be' in nursery, joining an activity and developing skills to participate in formal education at school and learning about the social rules and norms to enable them to participate in social situations and interactions with others. It could, therefore,

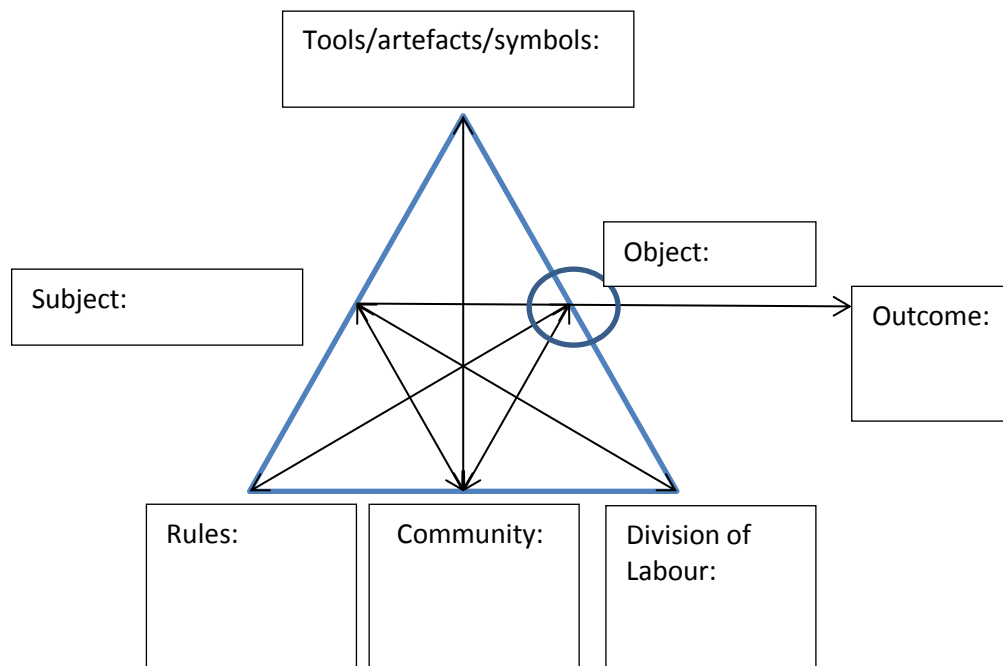
also describe the process of inclusion: children's participation in the learning and development opportunities afforded by access to the interactions, actions, activities, social practices, roles and routines that constitute the pedagogy in nursery.

It was proposed that the mediation of inclusion in terms of participation might be evident in the ways in which practitioners differentiated activities, adapted environments and resources and assisted children to participate in the social and learning opportunities available in nursery and the extent to which this participation could be regarded as 'full' participation or 'legitimate peripheral participation.'

Learning through Activity

Engeström (1999) developed Vygotsky's (1978) theory of mediated learning to include the social, cultural and historical influences in terms of the rules, division of labour and community. He developed a complex model of an activity system:

Engeström (1999) Second Generation: Activity System

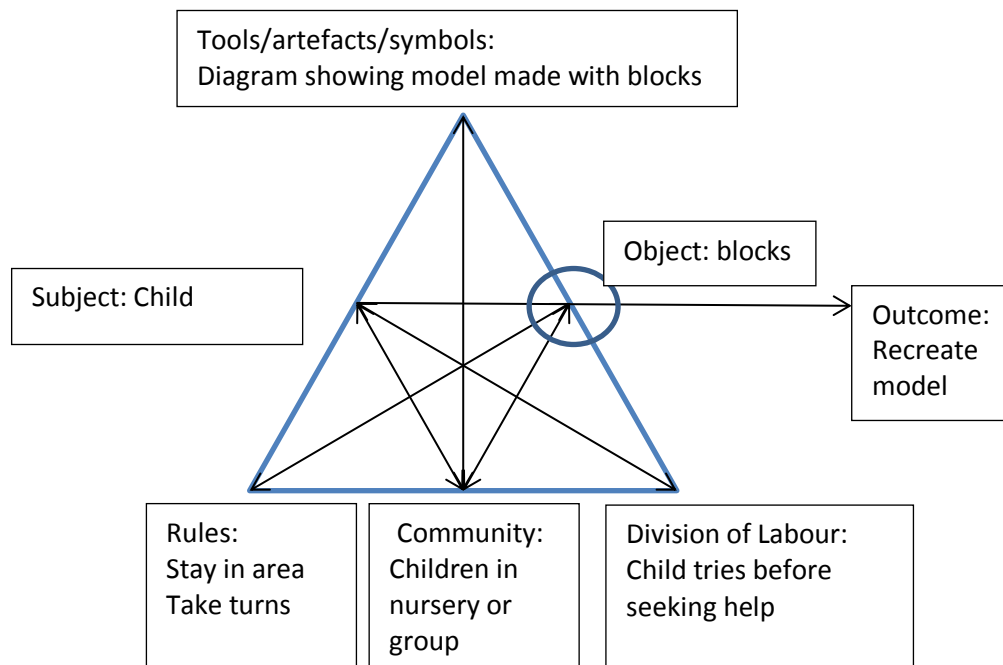


Russell (2002) defined the elements of the activity system as:

Elements of an Activity System (Russell, 2002)

| Element | Definition |
|--------------------|--|
| Subject(s) | Individuals or subgroup engaged in an activity with low histories and characteristics. |
| Object | Raw material or problem space. |
| Outcome | Maybe anticipated or surprising. |
| Tools | Anything that mediates action. This has a wide definition. |
| Community | Those engaging in the same activity. |
| Division of Labour | Roles of those participating in the activity. |
| Rules | Formal/explicit/tacit/implicit norms, routines, habits and values |

Example of Activity System for Play with Blocks



- The child's play with blocks could be mediated by a diagram (artefact) showing a construction or model for the child to copy (e.g. train).
- The oval around the object denotes the dynamic nature of actions relating to the object. The actions change as the child experiments and problem-solves to recreate the model.
- Actions are also mediated by the rules of the social context, the community and its practices and the division of labour.
- The social rules might include the blocks staying in a particular area, the number of children allowed in the area, sharing resources with others.

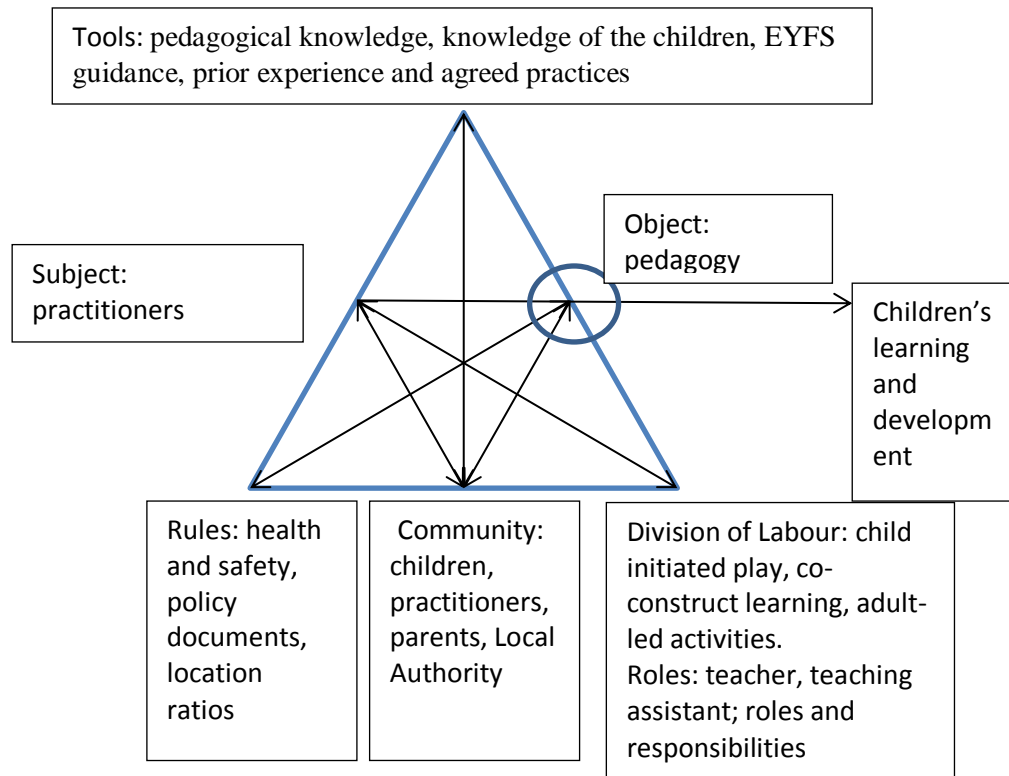
- The community might be children in the nursery or children in the same area. It might also include the community of builders, architects whose actions the child might be replicating or aspiring to.
- The division of labour could refer to turn-taking or the extent to which the child is expected to try the task independently before seeking help.

It was proposed that the pedagogy could be represented as an activity system:

| Element | Description |
|--------------------|--|
| Subject(s) | Practitioners in the nursery. |
| Object | Pedagogy in terms of practice or learning and cognitive development or participation. |
| Outcome | Children's learning and development. |
| Tools | Practitioner's pedagogical knowledge, knowledge of the children, EYFS guidance, prior experience and agreed practices. |
| Community | Practitioners, children and their families, as well as the wider community of the locality and associated with EY education. |
| Division of Labour | Adult role in nursery and the balance between child-initiated play and adult-led activities. |
| Rules | Legislation, safe practice, ratios, policies, roles might mediate the pedagogy. |

This could be shown as:

Pedagogy as an Activity System



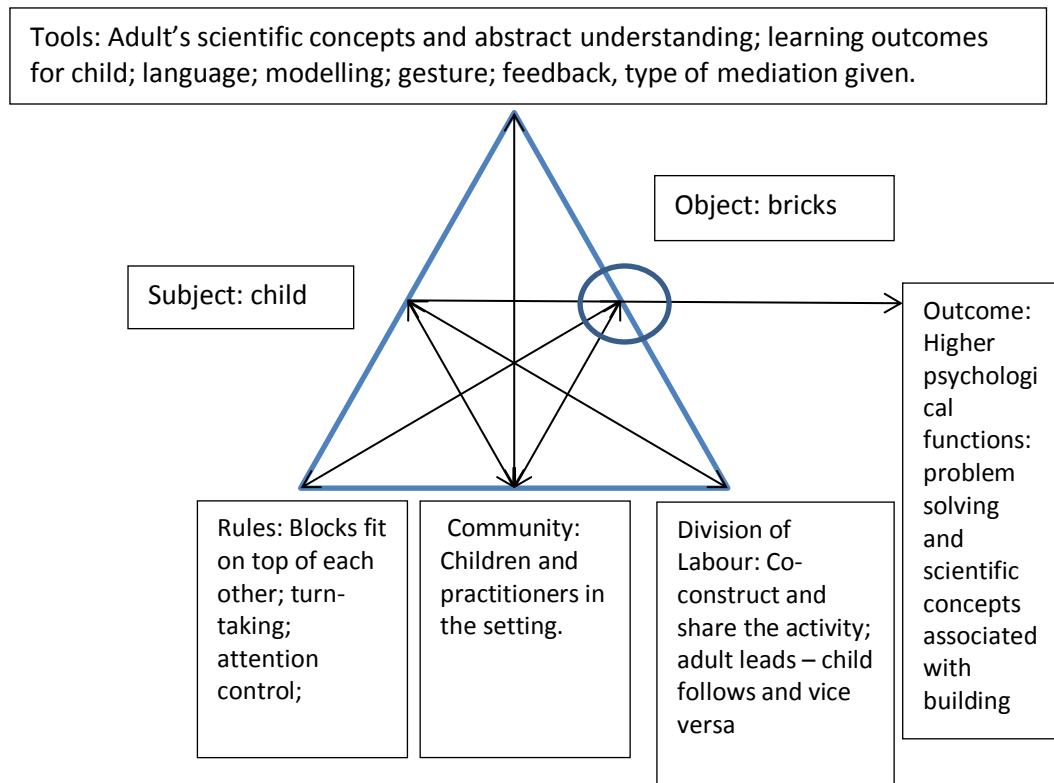
It was suggested that MLEs, pedagogical interactions between adults and children, could be shown as an Activity System.

Elements of an Activity System for MLE

| Element | Definition |
|--------------------|---|
| Subject(s) | Child |
| Object | bricks |
| Outcome | Higher psychological functions: problem solving and scientific concepts associated with building |
| Tools | Adult's scientific concepts and abstract understanding; learning outcomes for child; language; modelling; gesture; feedback, type of mediation given. |
| Community | Children and practitioners in the setting. |
| Division of Labour | Co-construct and share the activity; adult leads – child follows and vice versa |
| Rules | Blocks fit on top of each other; turn-taking; attention control; |

This could be shown as:

MLE as an Activity System



2.6 Sociocultural Approach to Pedagogy

Fleer (2002) suggested that:

“The sociocultural theory that has evolved from Vygotsky and those that followed has been rich and exceedingly useful for framing practices within early childhood education.” (Fleer, 2002, p.109).

It was proposed that the conceptual frameworks considered could be used to investigate the pedagogy, pedagogical interactions as MLEs and the processes through which children might participate in the practices in nursery in order to describe the pedagogy in relation to the mediation of learning and cognitive development and inclusion.

It was suggested that CHAT (Engeström, 1999) could be used to investigate the pedagogy and MLE; the construct of mediation and MLEs could be used to describe the pedagogical interactions or SSTs (Sylva, et al. 2004) and mediation of learning and cognitive development and Lave and Wenger's (1991, 1999) description of participation could be used to describe inclusion.

It was felt that a unifying conceptual framework was needed to give a coherent description of the pedagogy. Rogoff's (1990, 1995) Three Planes of Analysis was used.

Rogoff's (1990, 1995) Three Planes of Analysis

Rogoff's Three Planes of Analysis was chosen because it offers a theory of development that can be applied to other aspects of EY education, including assessment and pedagogy (Fleer, 2002, 2003).

Rogoff (1995, 2003) suggested development could be observed on three interrelated planes:

- **Community;**
- **Interpersonal;**
- **Personal.**

Description of Planes (From Rogoff, 1995)

| Plane | Description | Characteristics |
|---------------|--|--|
| Community | Individuals participating in socially and culturally organised activities that support development | Activities , practices, organisation, purposes, resources, means, cultural tools, values |
| Interpersonal | Involves learning with and from others in a process similar to the construct of the MLE | Direct interaction, roles and structures, cultural activities, communication, collaboration, routines, goals |
| Personal | Process of change arising from participation in the wider sociocultural activity | Participation, roles, change over time, transformation, dynamic, |

These planes coexist and development occurs across and between these planes at the same time.

Rogoff described development as an inter-related, interactive process, influenced by social, cultural and historical factors and arising from interactions within and between the planes. This includes the interaction between the adult and child within the ZPD. She suggested that development should be studied in context to recognise the complex factors and influences rather than focusing on discrete areas.

Rogoff suggested that the three planes could provide a focus for analysis: planes could be foregrounded and considered separately, however, others would always be in the background.

Rogoff's (1990, 1995) Three Planes of Analysis was used to investigate the pedagogy and the mediation of learning and cognitive development and inclusion in terms of participation by focusing on the processes within each plane and applying conceptual frameworks developed from Vygotsky's (1978) theory to inform data collection, analysis and interpretation in order to create a rich description of the pedagogy.

Conceptual Frameworks applied at each Plane

| Plane: | Focus: | Conceptual Framework |
|---------------|---------------------------|---|
| Community | Pedagogy | CHAT (Engeström, 1999) |
| Interpersonal | Cognitive development | MLE (Kozulin, 1998) CHAT |
| Personal | Inclusion (participation) | Legitimate Peripheral Participation (Lave and Wenger, 1999) |

3 Data Collection and Analysis

The research was guided by the following research questions, developed from the literature:

6. **How can sociocultural conceptual frameworks and constructs developed from Vygotsky's (1978) theory be applied to investigate the pedagogy in the nursery?**
7. **How might the pedagogy mediate learning and cognitive development?**
8. **How might the pedagogy mediate inclusion in terms of participation of all children across the setting?**
9. **How do practitioners mediate children's learning and cognitive development and their inclusion in terms of their participation?**
10. **How might practitioners' constructs about young children's learning and development inform the pedagogy in terms of the mediation of cognitive development and inclusion?**

Data was collected about the pedagogy in each plane in relation to learning and cognitive development and participation (inclusion).

Data Collection within each Plane

| Plane: | Focus: | Data Collection: |
|---------------|---------------------------|---|
| Community | Pedagogy | Interviews with practitioners Observations during typical sessions |
| Interpersonal | Cognitive development | Observation of MLE: pedagogical interaction between adult and child. |
| Personal | Inclusion (participation) | Observation of two children: one with AN and one without AN |

Consent was sought from practitioners and parents of children. Audio recordings were made of the interviews and observations. These were transcribed later. Copies of the interview transcripts were given to the practitioners involved.

3.1 Interviews with Practitioners

Semi-structured interviews were conducted with 13 practitioners: teachers and teaching assistants working with children with and without additional needs in either the mainstream provision or the special provision.

Practitioners Interviewed

| Role: | Class: | Working with: | Number: |
|---------------------|-------------------|----------------------|----------------------------------|
| Teacher | Mainstream | Children without AN | 2 (including Deputy Headteacher) |
| Teaching Assistant | Mainstream | Children without AN | 2 |
| Teaching Assistant | Mainstream | Children with AN | 3 |
| Teacher* | Special Provision | Children with AN | 2 (including SENCO) |
| Teaching Assistant* | Special Provision | Children with AN | 4 |

(*This included pilots with a teaching assistant and teacher)

Questions were used to prompt a discussion about the pedagogy in terms of practices within a typical session, supporting learning and cognitive development and participation. Practitioners were prompted to elaborate and develop their responses.

3.2 Observation of Sessions

Observations were made of typical sessions in the mainstream provision and special provision to collect information about the context.

3.3 Observation of MLE

Six MLEs were observed. Practitioners identified activities that they would be sharing with particular children to move their learning development. They were asked to identify activities that they would be doing anyway to reflect everyday practice.

MLEs Observed

| Practitioner | Activity | Child | Context |
|---------------------|--|--|-------------------|
| Teacher | Making a house from a cardboard box. | Girl, 3 – 4 years old. No AN. | Mainstream |
| Teaching Assistant | Sharing books. | Girl, 3 – 4 years old. No AN. | Mainstream |
| Teaching Assistant | Playing a board game. | Boy, 3 – 4 years old with AN (SLCN, learning needs). | Mainstream |
| Teacher | Exploring water and blocks. | Boy, 3 – 4 years old with AN (SLCN, learning needs and medical needs). | Special Provision |
| Teaching Assistant | Exploring balls and sensory toys. Moving independently. | Boy, 3 – 4 years old with AN (SLCN, learning needs, VI and physical needs). In wheelchair – able to move on knees. | Special Provision |
| Teaching Assistant | Exploring porridge and dry oats; making a picture. Accessed in wheelchair. | Boy, 3 – 4 years old with AN (SLCN, learning needs, VI and physical needs). In | Special Provision |

| | | | |
|--|--|-------------|--|
| | | wheelchair. | |
|--|--|-------------|--|

3.4 Observation of Children

Two children, one with AN and one without AN were observed during typical sessions. Their activities and interactions were recorded.

3.5 Data Analysis

The data was analysed to identify themes. Common themes for all children were identified and themes that suggested differentiation of the pedagogy for children without AN and children with AN.

Common themes were identified when all or nearly all practitioners described the pedagogy in the same or similar ways.

Differentiation was indicated when themes were evident from the responses of either most or all practitioners working with children without AN or from most or all practitioners working with children with AN.

The findings did not indicate differences in responses according to role (teacher or teaching assistant) or setting (mainstream or special provision).

4 Findings

The findings are presented below for each plane:

- **Community;**
- **Interpersonal;**
- **Personal.**

4.1 Pedagogy within the Community Plane

The findings suggested that pedagogy within the Community Plane in relation to **practice, learning and cognitive development** and **participation** involved:

1. **Everyday Practice**
2. **Values**
3. **Adult Role**
4. **Mediation**
5. **Outcome**

Practitioners also indicate future developments for pedagogy and practice in the nursery.

Common findings were identified for each area, as well as the ways in which the pedagogy might be differentiated based on whether or not children had AN.

4.1.1 Everyday Practice

A Practice

Common:

- Shared routines across the nursery.
- Practitioners felt practice was informed by experience in post.
- Shared assessment practices captured ‘everyday’ learning and responses.

Differentiation:

- Routines for children without AN facilitated autonomy; children with AN were supported to follow routines.
- Adult-led group activities for children without AN focused on developing literacy and numeracy skills; adult led group activities for children with AN focused on developing social skills, communication, interaction and turn-taking.
- Children without AN could choose the context they participated in: groups or on their own.
- Routines and practices were adapted to the individual needs of children with AN. This included activities linked to the IEP, communication approaches used and managing transitions.

B Learning and Cognitive Development

Common:

- The activity or approach used was adapted to meet the needs of individual children taking into account individual differences in interests, learning style, development (including language development) and pace of learning.
- Practice was informed by theories about child development (personal and academic) and pedagogical approaches (e.g. Reggio).
- Knowing about individual children informed practice.
- Practitioners felt collaboration and teamwork was significant to developing practice that supported the learning and development of all children.

Differentiation:

- Activities were differentiated according to the medical and developmental needs of children with AN.
- Activities were adapted to provide more sensory stimulation for children with AN.
- Communication was differentiated to include PECS and Makaton to help children with AN make choices.
- Some activities were differentiated so that children with AN had one-to-one support. These were often linked to the IEP.

C Participation

Common:

- Practitioners felt most activities could be adapted to be inclusive.
- Context affected participation: outdoors and a high adult to child ratio were felt to facilitate participation.
- Barriers included access to some parts of the building, some activities outdoors, staff ratios, size of area.
- Activities could be adapted by bringing the activity to where the child is comfortable, making resources accessible and creating an accessible environment.
- Some activities could be differentiated by expectation so that children could participate in different ways alongside each other.

Differentiation:

- Some children without AN chose to go through to play in the special provision.
- Some children with AN were supported to access activities in the mainstream.
- Practitioners working with children with AN felt sensory play, baking and creative activities in the mainstream room could be easily differentiated so that children could access them together, regardless of need.
- Practitioners working with children with AN were concerned that participation might be imposed on children with AN. Children with AN depended on support to enable them to participate. Practitioners were concerned that they might not be able to indicate choice.

4.1.2 Values

A Practice

Common:

- Practice needed to be flexible, offer continuous provision and opportunities for children to learn through play.
- There needed to be a balance of child-led learning and adults intervening to guide learning.
- Practices encouraged children to become autonomous learners: following their interests and making choices.
- Practice needed to be individualised to reflect the needs and interests of individual children.
- Mutual support and collaboration was valued by practitioners working in the nursery.
- Practice tended to be situated in context: practitioners described the practice where they mostly worked – mainstream or special provision.

Differentiation:

- Children without AN were regarded as autonomous learners.
- Children with AN were felt to need individual support with a balance of child-led and adult directed activities to ensure they develop skills.
- Practitioners working with children with AN felt they needed to work at their own pace and in their own style.
- Practitioners working with children with AN valued liaison with outside agencies (e.g. medical professionals) and parents to inform practice that met individual needs.

B Learning and Cognitive Development

Common:

- Children learn through play
- Learning was regarded as a social process: children learn with and from others.
- Children's interests should lead learning.
- Practitioners respected individual children's knowledge, experience and learning style. They felt children learnt at their own pace and in accordance with their interests.
- All children were felt to be at different stages in their development, regardless of any identified AN.
- Collaboration with parents and outside agencies was valued as informing practice to support learning and cognitive development.
- Practitioners felt learning and cognitive development was influenced by environment, contextual factors (e.g. home, nursery, area live in), social factors (e.g. peers, media) as well as within child factors (medical needs, learning style, emotional needs). This suggested an interactionist view of development.
- Practitioners valued the role of the learning environment, particularly the outdoors play area and the Forest school as enabling children to learn by pursuing their interests.

Differentiation

- Children without AN were regarded as able to work things out, investigate, use resources, guide their own learning and be autonomous learners.

- Children with AN were regarded as dependent learners needed adult support and guidance.
- Children without AN were felt to need opportunities to explore on different scales and in different environments.
- Children with AN needed support from adults who knew them well and could respond to them to encourage, praise and model to help them learn.
- Children without AN were felt to learn from experience, including mistakes.
- Children with AN were felt to learn through repetition.
- Children without AN showed individual differences in learning style and disposition.
- Children with AN needed individualised approaches: giving them time and space to respond at their own pace, meeting their basic needs and helping them to feel safe and secure.
- Practitioners working with children with AN regarded their development as different. It took them longer to learn and they were less adaptable. Their pattern of development was regarded as ‘uneven’ and they were felt to ‘miss out’ development. Learning and cognitive development of children with AN could be affected by medical needs. Medical advice was needed to inform the approach adopted.

C Participation

Common

- Practitioners felt inclusion benefitted all.
- Practitioners created areas for children to share and join together.
- Participation necessitated respecting individual differences and the child’s choice to participate.
- Some children needed adaptations to make activities and the environment more accessible.
- Some children’s dispositions facilitated inclusion: some children without AN showed sensitivity and were caring towards children with AN.
- Children without AN were flexible: they could accept that the social rules might apply differently for different children.

Differentiation:

- Practitioners working with children without AN felt participation was affected by individual differences in social development.
- Practitioners working with children with AN felt activities needed to be adapted so that children could participate according to their individual strengths and needs to develop skills.
- Practitioners working with children with AN felt participation would be facilitated by appropriate planning to adapt activities.

4.1.3 Adult Role

A Practice

Common

- Practitioners described their role as supporting and facilitating learning by:
- Observing children; mediating learning by modelling, working alongside, questioning, following children’s lead and providing resources and differentiating the pedagogy by

working at the child's pace and responding to their learning style to extend ideas and play.

- Teachers also highlighted their management role.

Differentiation

- Practitioners working with children without AN enabled children's learning.
- Practitioners working with children with AN assisted children to follow routines, engage with play activities and make transitions. They focused on individuals to meet their needs including basic needs and ensure their wellbeing in nursery.
- Practitioners working with children with AN also support development of language and communication using PECS, Makaton, gesture as well as speech.
- Practitioners' role with children with AN was informed by their IEP.

B Learning and Cognitive Development

Common

- Practitioners' supported children's learning and cognitive development by encouraging them to make choices and helping them to be independent learners.
- Their role was to enable and assist learning by intervening when appropriate as well as encouraging children to be independent.
- Intervention was based on observations of the child to get to know them, know their interests and the approaches they respond to.
- Practitioners created environments and provided resources that allowed children to investigate and explore to support independent learning.
- Practitioners encouraged children to problem-solve.
- They collaborated with colleagues to review and reflect to inform practice.

Differentiation

- Practitioners working with children without AN felt their role was to enable learning and excite children about learning.
- Practitioners working with children with AN felt their role was to intervene to assist, act as a 'tool' to promote cognitive development using different types of mediation, particularly modelling, supporting and encouraging

C Participation

Common

- Practitioners felt their role was to facilitate interaction between children by:
 - Making sure they know each other's name;
 - Highlighting what children can do;
 - Using children's strengths to involve them;
 - Encouraging children to interact with each other;
 - Finding opportunities for children to interact;
 - Planning activities for children to share;
 - Modelling interaction;
 - Giving a child with AN a role in the play;
 - Asking for specific children to do an activity.
- Practitioners felt knowing and understanding individual children supported this.

Differentiation

- Practitioners working with children without AN facilitated participation by inviting children with AN to join activities.
- They felt participation was influenced by practitioners' knowledge and understanding of individual children's needs or being protective.
- Practitioners working with children with AN facilitated participation by enabling access. This included:
 - Modifying activities.
 - Allowing access to different environments as part of the routine.
 - Taking children into the mainstream class on a regular basis.
 - Moving resources to the child.
 - Taking the child to resources.
 - Placing resources in reach.
 - Supporting and reassuring the child.
- They felt some children depended on adult support to facilitate participation.

4.1.4 Mediation

A Practice

Common

- Practice was mediated by shared tools for planning and recording, including EYFS.

Differentiation

- Practice for children with AN was informed by information about typical development from EYFS, IEPS and reports from outside agencies.

B Learning and Cognitive Development

Common

- Practitioners used a range of approaches and techniques to mediate learning and cognitive development:
 - Tools and artefacts: books, photographs.
 - Modelling: doing the activity with the child or playing alongside and showing them.
 - Encouraging.

- Peer mediation: asking a child to show other children what they had done or the way they solved problems.
- Teaching specific skills and how to use tools.
- Language and communication approaches.
- Language was felt to be a significant mediator of learning and cognitive development. This was described as one of the tools given to children.

Differentiation

- There were qualitative differences in the mediation used, particularly language.
- Practitioners working with children without AN used language to elicit thinking and to develop thinking and problem-solving.
- Practitioners working with children with AN used language to model new vocabulary often single word. Alternative forms of communication were also used: PECS, Makaton, gesture and objects of reference.
- Practitioners working with children without AN used tools and artefacts such as books, checklist, photographs and ICT resources to enable children to explore their interests and develop knowledge and understanding.
- Practitioners working with children with AN introduced tools and artefacts to extend play by modelling new possibilities, for example, different ways to explore water.
- Tools such as visual timetables were also used.
- Practitioners working with children without AN intervened to guide learning by making suggestions rather than showing or telling or doing the activity.
- Practitioners working with children with AN used a range of mediational means:
 - Encourage by using praise and tangible rewards. Rewards were contingent on specific actions and were specific to the child.
 - Model what else the child could do. This included exploring in play, language, actions, use of tools. Practitioners emphasised the significance of modelling to mediate learning and cognitive development.
 - Use of cues and prompts to elicit responses, including sensory cues such as sounds associated with the routine.
 - Repetition. Practitioners felt children learned when the activity was repeated regularly and support withdrawn over time so that the child could do it independently.
 - Hand over hand support was used to help the child experience something new.
- They felt the approach used was significant: children with AN needed a calm, relaxed approach with the adult doing the activity with or alongside them at their pace, responding to their needs and adapting the activity as necessary.

C Participation

Common

Practitioners mediated participation by:

- Encouraging joint play and sharing of activities and resources.
- Prompting to involve children in play.
- Ensuring children can access activities by adapting activities, resources, positioning and environments.
- Helping the child to feel happy and secure.

Differentiation

- Practitioners working with children without AN encouraged peer mediation: encouraging a child without AN to involve children with AN in their play and support that child.
- Practitioners working with children with AN mediated participation by modelling, encouraging sharing and using social language. They also created social experiences for the children.

4.1.5 Outcome

A Practice

Common

- Practitioners identified children's positive affect. For some children, this might be evident from their non-verbal communication.
- Progression.

Differentiation

- Children without AN actively engaged in planning activities for the next session.
- Children with AN developing skills and becoming independent.

B Learning and Cognitive Development

Common

- Children becoming independent with activities.
- Transferring learning to new situations.
- Achieving a task.

Differentiation

- Children with AN spontaneously choosing an activity or spontaneously repeating it.
- Children appearing happy, calmer and less reluctant.

4.1.6 Future Developments

Pedagogy

- Practitioners valued the pedagogy and the provision.
- They recognised the need to reflect, review and develop practice.

Inclusion

- Practitioners felt there should be some planned inclusive activities.
- Practitioners felt access should be increased across the rooms and to activities.
- Finding a shared focus for children to work on might support inclusion.
- Inclusion could be based on identifying learner needs that are common to all.

Practitioners

- Need to share knowledge about and be aware of children's individual needs and abilities. This could include sharing information, practitioners working across the setting and increasing joint working.
- Shared training including on special needs.

Environment

- It was anticipated that the proposed Forest School would provide opportunities for enhancing inclusion: children with AN could explore sensory experiences whilst children without AN could play imaginatively, investigate and problem-solve.

4.2 Pedagogy within the Interpersonal Plane

The findings suggested that pedagogy within the Interpersonal Plane in relation to MLE involved:

- 1. Activity characteristics.**
- 2. Adult Role**
- 3. Mediation**
- 4. Child's Response**
- 5. Situation Definition**
- 6. Learning and cognitive development**

The findings are presented as they relate to all or most children as common themes and as differentiated themes relating to children according to whether or not they had AN.

4.2.1 Activity Characteristics

Common

- Activities were initiated by practitioners. They introduced an object and made it meaningful or significant to the child
- Activities extended or developed prior learning.
- Most were open-ended, with the exception of the board game. They had the potential to develop in different ways according to the interests or needs of the child.
- They were goal directed: there was an outcome in most instance identified by the practitioner.
- The practitioner led the activity, the child followed.
- Activities were culturally significant: they involved learning that was relevant to the culture of education and child development.

Differentiation:

- Activities involved developing culturally significant curriculum skills for children without AN and conventional play for children with AN.
- Activities with children without AN provided opportunities to develop higher psychological functions: problem-solving, inference and scientific concepts, estimation.
- Activities for children with AN provided opportunities to develop lower psychological skills through sensory play: attention, perception, memory. They involved actions on objects and practitioners intervened to develop systematic or conventional actions.

- Language was used to prompt thinking and reasoning with children without AN.
- Language was used to model vocabulary for children with AN. Shared communication was supported using Makaton and short phrases.
- Activities were co-constructed and negotiated between the practitioner and child without AN.
- Activities tended to be adult-directed and practitioners prompted children with AN's involvement and development.
- Activities with children without AN involved developing culturally significant knowledge, for example, literacy and numeracy skills, conventional representation of a house, representing stories in books.
- Activities for children with AN involved developing culturally significant ways of interaction with objects, including conventional ways of using blocks, games with rules, and making pictures.

4.2.2 Adult Role

Common

- Practitioners set up and managed the activity: they signalled the start and finish.
- They used a range of mediational means.
- They adapted activities to the child's response.
- They modelled new language and communication approaches, including vocabulary associated with the activity, providing a narrative and explaining.
- They made links to prior experiences and knowledge explicit.
- They promoted affective involvement: they made the activity fun and enjoyable.

Differentiation

- Practitioners co-constructed activities and guided learning through negotiation with children without AN.
- They supported children without AN to develop higher psychological functions: thinking, reasoning and problem-solving, particularly verbal reasoning, and to develop key skills.
- They encouraged children without AN to adopt a scientific approach.
- They assisted the child to realise what she wanted to do.
- They encouraged the child to behave autonomously: making decisions and choices about learning.
- Practitioners intervened to direct and support the learning of children with AN.
- They mediated learning by direct intervention to make the object or activity significant to the child.
- Practitioners assisted children with AN to use their senses to notice, to focus their attention, to maintain joint attention and involvement. They intervened to develop lower psychological functions such as attention, perception and social communication skills.
- They gave feedback contingent on responding.
- Practitioners encouraged goal directed actions and systematic exploring.
- They supported children with AN to develop reciprocity and turn-taking.

4.2.3 Mediation

Common

Practitioners used a range of mediational means: tools, artefacts, prompts and approaches to mediate learning. Shared mediational means included:

- using language as questions or verbal prompts to elicit responses or specific actions, modelling,
- encouraging,
- providing positive feedback and praise
- Hand over hand support to teach new actions or skills.

Differentiation

- Practitioners working with children without AN mostly used verbal mediation: open-ended questions to elicit thinking and reasoning, talking about the activity together.
- They prompted children to make links to prior experiences enabling the children to transfer knowledge and skills.
- They made activities meaningful by making links to experiences at home.
- They used artefacts, such as a photograph of a house.
- They gave hand over hand support to use tools and teach skills.
- They praised children for being ‘clever.’
- Practitioners working with children with AN gave more frequent, intensive mediation. This seemed to be a significant feature of the shared activity.
- They used language as a narrative to prompt and describe actions and effects.
- They used a ‘ready, steady..go’ prompt to focus attention and elicit responses.
- They used questions to focus attention.
- They gave hand over hand support to guide or move through actions.
- Verbal, gestural and physical prompts were used frequently.
- Mediational means were often combined: verbal prompt, model and hand over hand.
- Mediation was used to focus attention, regulate behaviour, refocus attention and re-engage children with the activity, maintain involvement.
- Children were praised for being ‘good.’

4.2.4 Child’s Response: Effects of Mediation

Common

- Children shared joint attention to varying degrees.
- They responded to questions and prompts according to their strengths and needs.
- They made reciprocal responses and engaged with turn-taking exchanges.

Differentiation

- Children without AN demonstrated that they could apply their knowledge and understanding to the activity.
- They were able to solve problems, talk about what they were doing and seemed motivated to share their activity with the adult.
- They seemed to be autonomous learners.
- Their actions appeared purposeful and goal-directed.

- They could make choices and communicate these to the adult.
- There was evidence of verbal reasoning: describing what they were doing, planning and giving reasons for actions.
- The children spontaneously investigated objects and resources and pursued ideas for play within the activity.
- They collaborated with others: the adult and other children.
- They seemed immersed and involved in the activity.
- They seemed aware of the social norms and conventions in nursery.
- Children with AN demonstrated exploration and investigation in play. This seemed motivated by sensory feedback.
- They needed significantly more input, guidance and mediation to make responses indicative of learning and development.
- They tended to share the adult's activity briefly then resume exploration in play.
- They needed significant mediation to show goal-directed actions on objects and conventional play.
- Their responses tended to be cued and prompted.

4.2.5 Situation Definition

Common

- The focus for the activity seemed to change during the MLE.
- The practitioner introduced the activity, defining the situation and the child seemed to share this initially.
- The shared situation definition seemed to be negotiated with the child.

Differentiation

- Children without AN could relinquish their situation definition (e.g. making the interior of a house from a box) for the practitioner's definition (e.g. making the exterior of a house).
- They could follow the adult's lead and were able to introduce their own situation definition appropriately at a later point in the MLE. This provided the context for mediating learning in the direction planned by the practitioner and according to the interests of the child.
- Children with AN needed significant prompting and intervention using a range of mediational means in order to relinquish their situation definition (e.g. exploring in play) in favour of the practitioner's (e.g. goal-directed actions, cause and effect).
- A range of mediational means were used to establish joint attention and a shared situation definition so that the child and the practitioner were acting on the object in the same way or for the same outcome.
- Children with AN seemed to move between their situation definition and the practitioner's, creating brief opportunities for mediating learning.
- They interacted with objects and their immediate environment in ways that might be meaningful to them and they needed significant mediation to share meaning and consequently develop conventional actions in play.

4.2.6 Learning and Cognitive Development

Common

The child's responses and the mediation observed indicated potential learning and cognitive development. It was beyond the scope of the study to confirm this.

- Children appeared to develop relevant cognitive skills, for example, using tools (scissors), noticing rhyming words, recognising numbers, putting balls on guttering and noticing similarity and difference.
- The pedagogical interactions also provided the context for developing social and communication skills, particularly for children with AN.
- Children were encouraged to investigate and adopt a 'scientific approach' observing the effect of their actions and noticing what happened.
- There were opportunities to develop language and communication. New vocabulary (words and Makaton signs) was modelled by the adults.

Differentiation

- Practitioners enabled children without AN to apply their knowledge and skills to develop higher psychological functions: problem-solving, thinking and reasoning, planning, predicting and inferring.
- Questions were used to prompt thinking and verbal reasoning. This was evident from questions to elicit inference and prediction whilst sharing books and encouraging the child to 'test' the transparency of windows made from masking tape.
- Activities were used to develop curriculum-based skills: literacy and numeracy. This suggested children without AN could develop skills and abilities that are socially and culturally valued within the education system.
- Practitioners supported children with AN to develop attention control, perceptual skills, goal-directed actions and a systematic approach. This suggested that MLEs might develop lower psychological functions or spontaneous responses to develop control of cognitive functions (attention, perception) to help children notice and respond to experiences in a systematic way.
- They supported children with AN to develop exploratory play towards goal-directed and conventional play. For example, moving from exploring oats to making a picture with them; from moving blocks to building towers and counting.
- They encouraged children to notice number concepts (counting and recognising numbers) and gradient (slope of guttering).
- They helped children to become aware of their immediate learning environment and social context, taking turns and interacting with others.
- Practitioners also mediated children with AN's affective, social and communicative responses to develop reciprocal interactions as the context for mediating learning.

Language seemed to be the primary mediator of learning and cognitive development for children without AN. Developing social, affective and communicative responses seemed to be significant to learning for children with AN. This suggested that intersubjectivity and shared activity were necessary as the context for mediation of learning and cognitive development as well as development of social, communicative and affective responses.

4.3 Pedagogy within the Personal Plane

Two children were observed in context during typical sessions: a child without AN in the mainstream provision and a child with AN in the special provision. The child with AN had one-to-one support throughout the session. He was supported by a teaching assistant.

The following themes were identified from the observations:

- 1. Routine**
- 2. Context**
- 3. Activity**
- 4. Child's role**
- 5. Adult role**
- 6. Interactions**

The findings will be reported as common themes: aspects of the pedagogy and session that were similar for both children and differentiation: the ways in which the pedagogy and experiences differed for each child.

4.3.1 Routine

Common

- The routine provided opportunities for child-led and adult-led activities and activities in groups.
- Both children accessed different environments.
- Both children accessed the special provision: the child without AN elected to go to the special provision for part of the session.

Differentiation

- The child without AN followed the routine independently or with minimal prompts from practitioners.
- She chose activities in nursery.
- She accessed snack independently.
- She chose to participate in adult-led activities, such as listening to a story or making a card.
- She joined in with social routines, such as tidying up.
- The adult-led group (N=12) activity included activities to develop mathematical skills: counting the children, writing a number, putting numbers into sequence and investigating measuring as well as the greeting and talking about the day of the week. It was led by a teacher.
- The child with AN had one-to-one support from a TA during the session observed. The practitioner helped him to follow routines, access activities, make choices and move to what he wanted to do.
- There seemed to be a balance of adult-led and child-led activities with choices negotiated by establishing shared communication.
- The child with AN seemed to have a more structured routine with timetabled activities, including snack. This included an adult-led small group for the greeting,

snack in an adult-led small group, play outdoors and a session in the multisensory room.

- More time was needed for transitions between activities: to move the child in and out of specialist equipment.
- Most of the child's time in nursery was directed.
- The adult-led small group (N=4) included activities to develop social interaction and communication skills. It was led by the teacher with three teaching assistants supporting.

4.3.2 Context

Common

- Both children participated in a range of contexts: different learning environments and different groups.

Differentiation

- The child without AN spent most of the session in the MS classroom and outdoor play area with other children.
- She elected to go through to the SP at the start of the session for a short time.
- The child with AN spent most of the session in the SP and environments linked to this, such as the multisensory room.
- He was supported by the TA throughout the session.
- He participated in small groups with other children with AN for the greeting and snack.

4.3.3 Activity

Common

- Both children accessed a range of activities, including sensory play.

Differentiation

- The child without AN chose activities in nursery and engaged with them independently.
- She chose a wide range of activities, including construction and role play. She made a castle with blocks for a princess (figure) and role-played being 'mum'.
- She seemed to become immersed and involved in her play.
- She played imaginatively alone and with other children.
- She shared her play with another child and showed co-operative play, planning and negotiating roles and actions.
- She chose to participate in an adult-led activity: making a card. She could engage with this independently once she was shown what to do.
- The child with AN was supported to choose activities in nursery.
- The practitioner set up activities so that he could access them.
- He made choices non-verbally by reaching towards what he wanted. This could be unspecific and the practitioner needed to interpret what he wanted to do.
- He could move to his choice of activity when on the floor.

- He engaged in a range of sensory activities that involved exploring and investigating actions on objects.
- He tended to engage with activities for a short time before indicating that he wanted to change object or activity.

4.3.4 Child's Role

Common

- Both children chose activities.
- They seemed sociable: they seemed to enjoy being with others.
- They seemed to be social learners: learning with and from others.

Differentiation

- The child without AN learnt with and from other children.
- She seemed to be relatively independent and an autonomous learner. She accessed activities and engaged with them independently.
- She engaged with cooperative activity.
- She used spoken language to play, negotiate and develop play with others.
- The child with AN learnt with and from the adult he was with.
- He seemed to be a dependent learner.
- Interactions were generally prompted.
- He investigated and explored in play.
- He used non-verbal approaches to communicate with the TA supporting him.
- He could indicate choice.
- He needed frequent prompts and support to develop his play and to meet his needs.

4.3.5 Adult Role

Common

- Practitioners were available to interact with and support both children.
- Practitioners provided teaching in adult-led group activities that focused on mathematical skills for the child without AN and developing communication skills and interactions with the child with AN.

Differentiation

- Practitioners prompted the child without AN about aspects of the routine and she chose to check her actions and activities with practitioners.
- She also chose to interact with them and involve them in her play by talking about what she was doing. Practitioners provided support in the form of suggestions when invited to join her activity.
- The practitioner working with the child with AN had a range of roles specifically to support the child. This included:
 - Ensuring his basic needs were met,
 - Supporting and enabling him to access a variety of activities;
 - Assisting him to indicate his choice of activity;
 - Supporting transitions between activities.

- Meeting physical needs, including transferring him between specialist equipment (standing frame and wheelchair) and onto the floor, helping him to use specialist equipment, checking he was comfortable.
- Mediating learning, social interaction and communication.
- Most interactions between the adult and child with AN seemed to mediate the child's response or develop actions.
- The practitioner modelled actions alongside the child and used verbal prompts to encourage the child to engage with activities in conventional ways.
- The practitioner seemed to have a significant role supporting the child's play and learning, ensuring his basic needs were met and that he could access and engage in a range of activities either with her or in small groups.

4.3.6 Interaction

Common

- Both children interacted with others and seemed motivated to be with others.

Differentiation

- Most of the child without AN's interactions were with other children to share and negotiate play and to converse with them in social situations.
- She seemed to interact with others for social purposes: to establish connections, reinforce friendships through shared experiences and likes and to share information. She seemed to understand the social conventions associated with these interactions and the relative roles of children and adults.
- She shared socioculturally valued interests.
- The child with AN mostly interacted with the practitioner supporting him.
- Few interactions were observed between the child and other children in the group. These tended to be non-verbal: making eye contact and social smile.
- The child initiated interactions with the practitioner and sought her response to his actions. Reciprocal interactions developed. These were scaffolded by the adult.

4.4 Summary

Data was collected about the pedagogy within each of Rogoff's (1990, 1995) Three Planes:

| Plane | Data Collected from: |
|---------------|--|
| Community | Interviews with practitioners Observations in setting |
| Interpersonal | Observation of MLE |
| Personal | Observation of child (with AN; without AN) in nursery. |

The findings suggested that the pedagogy could be described within each plane using the following themes:

| Plane | Focus | Themes |
|---------------|---|---|
| Community | Practice Learning and Cognitive Development Participation | Everyday Practice Values Adult Role Mediation Outcome |
| Interpersonal | Learning and Cognitive Development | Activity Adult Role Mediation Child's Response Situation Definition Learning and Cognitive Development |
| Personal | Participation | Routine Context Activity Child Role Adult Role Interactions |

There was evidence of shared practice and pedagogy within each plane, suggesting a shared pedagogy.

There was evidence that the pedagogy might be differentiated to respond to the strengths and needs of children with AN and children without AN. Practitioners' responses and the observations suggested that the pedagogy might be differentiated to meet individual needs, suggesting evidence of an individual pedagogy that responds to the medical, physical and developmental needs of children with AN and to the interests, learning style and dispositions of children without AN.

The findings suggested qualitative differences in the experiences and mediation of learning and cognitive development of children with and without AN.

Common themes were identified across the Planes, indicating the inter-relatedness of the Planes and pedagogy within and between each Plane. This included the adult role and mediation. The adult role included creating the context for learning and cognitive development and participation through social practices (e.g. routines, assessment, collaboration), activities, interactions, mediation of learning and the environments available and differentiating mediation to support individual children's learning and cognitive development and participation.

The findings suggested that the pedagogy situated learning and cognitive development and participation within social contexts and social interactions with language as a significant mediator for all children.

The findings will be discussed further in the following section.

5 Discussion of the Findings

This section will summarise the key findings from the research in relation to pedagogy and practice in the nursery and the mediation of learning and cognitive development and participation. It will describe the pedagogy using conceptual frameworks developed within the sociocultural approach, particularly CHAT (Engeström, 1999). It will indicate how the findings address the research questions.

The research collected information about the pedagogy at three levels, corresponding to Rogoff's (1990, 1995) Three Planes of Analysis to consider how the pedagogy might mediate learning and cognitive development and participation within and between these planes. Information was collected from:

| Plane | Themes: |
|---------------|--|
| Community | Interviews with practitioners Observations in setting |
| Interpersonal | Observation of MLE |
| Personal | Observation of child (with AN; without AN) in nursery. |

The findings will be outlined and discussed as they relate to the pedagogy within each plane.

5.1 Pedagogy within the Community Plane

5.1.1 Key Findings

The findings suggested the pedagogy within the community plane could be described in terms of:

- Everyday practice (e.g. routines, planning, assessment within a typical session)
- Values (constructs about practice, learning and cognitive development and inclusion)
Adult role
- Mediation
- Outcome

In relation to:

- Practice
- Learning and cognitive development
- Participation

Key findings included:

Everyday Practice

- Practitioners collaborated and co-constructed shared routines and practices across the setting. These were differentiated according to the needs and interests of individual children.

- Practices within the setting enabled children without AN to become independent learners and assisted children with AN to feel safe and secure.
- Activities developed culturally relevant skills. For children without AN, this included curriculum skills. This could contribute to 'school readiness' (Tickell, 2011). For children with AN, this included developing social and communication skills to enhance participation and learning.
- Activities were differentiated to meet the learning needs and interests of individual children.
- Approaches used to mediate learning and cognitive development were developed from knowledge of child development, pedagogical knowledge and knowing the children. Experience: participating in the social practices in nursery was felt to be significant to this.
- Participation was enhanced by the environment and resources provided and the extent these were accessible and could be differentiated so that children could participate together.
- Developmental needs and the extent to which children with AN could choose to participate influenced practices around participation.

Values

- Practices in nursery regarded children as independent learners able to pursue their own interests. Practitioners were available to facilitate independence and to intervene to support learning.
- Practice was regarded as situated in the interaction between the child, the environment and the activities available.
- Practice was co-constructed and collaborative. Practitioners valued teamwork and learning from peers.
- Learning was regarded as a social process: children learn with and from others.
- Interests led learning, however, practitioners suggested there were times when they might need to intervene to support learning and cognitive development.
- Learning and cognitive development were felt to be influenced by sociocultural factors associated with the context of nursery, home and the wider community.
- Children without AN were regarded as active independent learners, able to solve problems and lead their own learning. Children with AN were regarded as dependent learners, requiring assistance and intervention to enable them to actively engage with learning.
- Learning was situated in the context created by the environment, resources, activities and interactions. These were differentiated according to the needs of individual children.
- Participation was regarded as benefitting all. This is consistent with the findings from previous research (Talay-Origan, 2001; Clough and Nutbrown, 2003).
- Participation was felt to be facilitated by contextual factors, such as the accessibility of the environment and resources.
- Children without AN who engaged in activities with children with AN were regarded as caring. This suggested that inclusion was valued.

Adult Role

- Practitioners felt their role was to support and facilitate learning: enabling and exciting children without AN to learn and assisting children with AN to follow routines, engage with activities and communicate.
- Practitioners intervened to support children with AN to learn and to meet their basic needs.
- They encouraged children to become independent learners. This was facilitated by knowing individual children and when to intervene.
- They created environments and provided resources to facilitate learning and develop autonomy.
- Practitioners responded to individual children's dispositions as learners (Anning and Edwards, 1999).
- Practitioners felt they had an active role in enhancing participation.
- They facilitated interactions between children. This included inviting children with AN to join activities with children without AN.
- They supported children with AN to reassure them, helping them to feel safe and secure so that they could participate.

Mediation

- Practitioners indicated that intervening between the child and the activity might be a feature of the pedagogy, suggesting that Mediated Learning Experiences (MLEs) might be a feature.
- Practice was mediated by shared planning and recording as well as external guidance, including EYFS.
- Practice for children with AN, it was mediated by information about typical development from EYFS, IEPs and medical reports.
- Practitioners used a range of mediational means to support learning and cognitive development.
- Shared or common mediational means included: using tools and artefacts (books, photographs; modelling; encouraging; using language; peer mediation and teaching specific skills.
- There were qualitative differences between the mediation used for children without AN and children with AN, particularly in terms of the language, tools and artefacts and the degree of intervention. Similar approaches seemed to be adapted to the needs of the individual.
- Learning and cognitive development for children without AN was also mediated by the environment, resources and activities as well as interactions. Children were felt to learn through play and problem-solving in the context of play.
- Learning and cognitive development for children with AN was felt to be as a consequence of practitioners intervening between the child and object to mediate learning, as well as repetition and adapting pace.
- Practitioners' responses suggested that their actions and the resources provided created Zones of Proximal Development (ZPD) for individual children.
- Participation was situated in social interactions and mediated by practitioners and children without AN for children with AN.
- Children with AN were supported to develop the social skills and language skills needed to participate fully.

Outcome

- Practitioners described the outcome for effective sessions in terms of the positive affect or emotional responses of children (happy, calm) and progress.
- Progress was indicated by children with AN being willing to engage with activities and/or repeat activities and for children without AN to be actively engaged in planning activities for the next session.

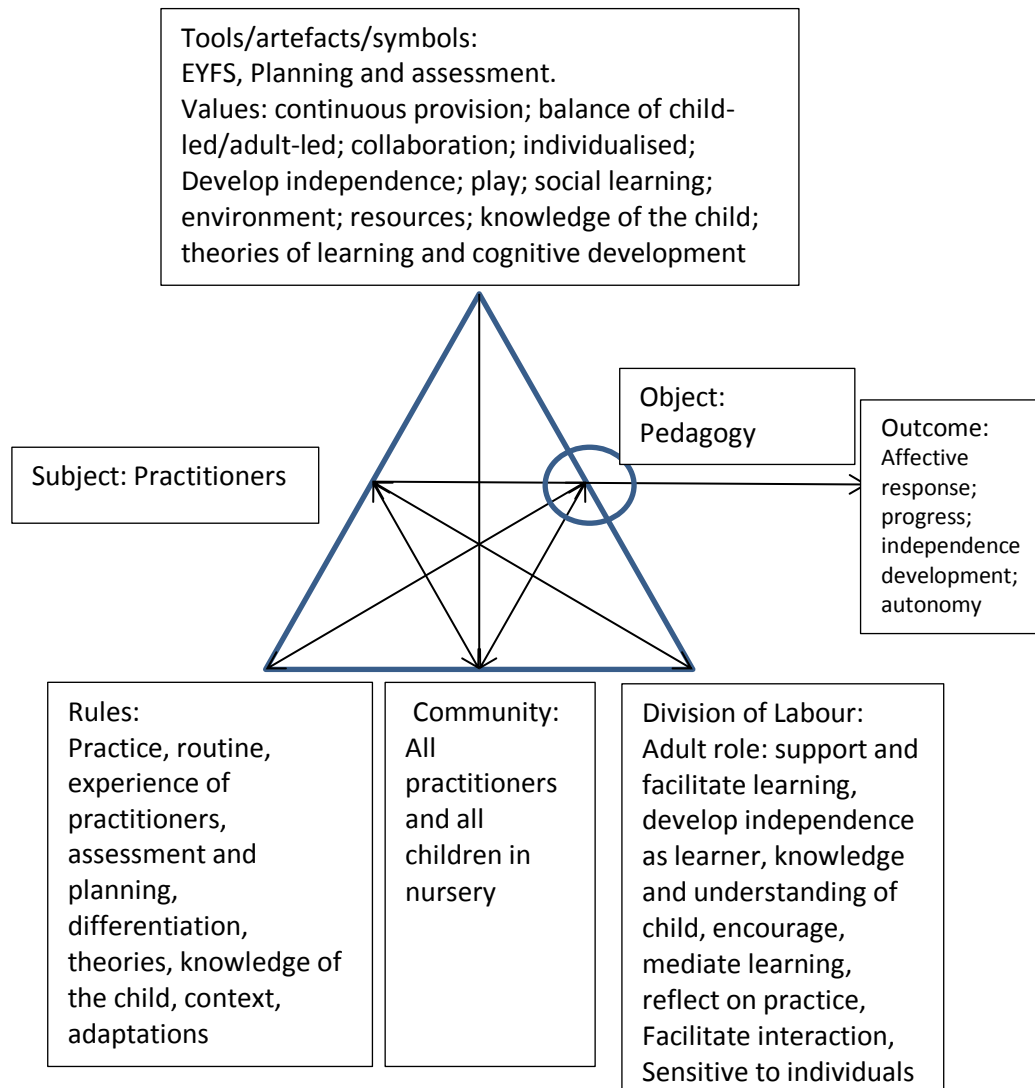
The findings suggested that:

- Practitioners' practices and constructs about learning and participation seemed to be consistent with Vygotsky's (1978) theory of learning and cognitive development. Practitioners described situations in which they mediated learning and also the ways in which the context (environment, resources and activities) mediated learning and participation. They seemed to situate learning in social contexts and social interactions.
- Learning and cognitive development seemed to be mediated by a range of approaches that were adapted to the needs of the individual as well as contextual factors. Language seemed to be a significant mediator.
- Participation seemed to be mediated by the accessibility of the environment, resources and social interactions, as well as practitioners' interventions to facilitate interactions.
- Practitioners seemed to value peer support and teamwork, suggesting that practices and pedagogy were co-constructed and the nursery functioned as a community of practices.
- Practitioners felt experience was significant to practice. This seemed to be consistent with Lave and Wenger's (1999) description of participation in communities of practice progressing from legitimate peripheral participation (joining the nursery) to full participation through experiences over time.

5.1.2 Applying Conceptual Frameworks

Cultural Historical Activity Theory (CHAT) (Engeström, 1999) was used to represent the pedagogy as an activity system to show the mediating effects of different elements identified from the findings:

Pedagogy as an Activity System



(Based on Engeström, 1999)

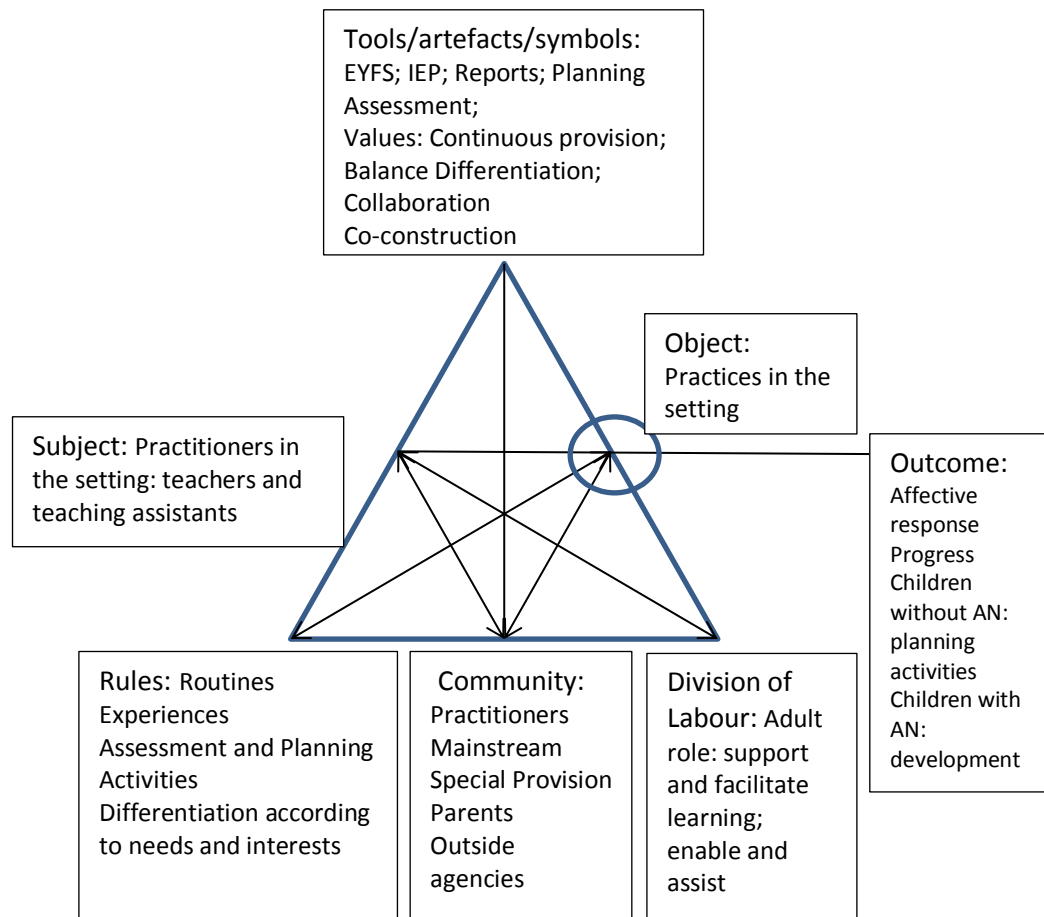
This shows the pedagogy is mediated by:

- Tools/ artefacts/ symbols, such as EYFS guidance, practices around planning and assessment, values, such as continuous provision and a balance between adult and child-led activities, theories and knowledge about learning and cognitive development.
- Rules, associated with the practices and routines, including the ways in which these might be differentiated according to the needs and interests of individual children.
- Community of practitioners and children in the nursery.
- Division of labour relating to the adult role creating the pedagogy and the opportunities for learning and cognitive development and mediation.

This was further developed as three inter-connected activity systems to show the pedagogy in relation to:

- Practice
- Learning and cognitive development
- Participation

Pedagogy in relation to Practice as an Activity System



(Based on Engeström, 1999)

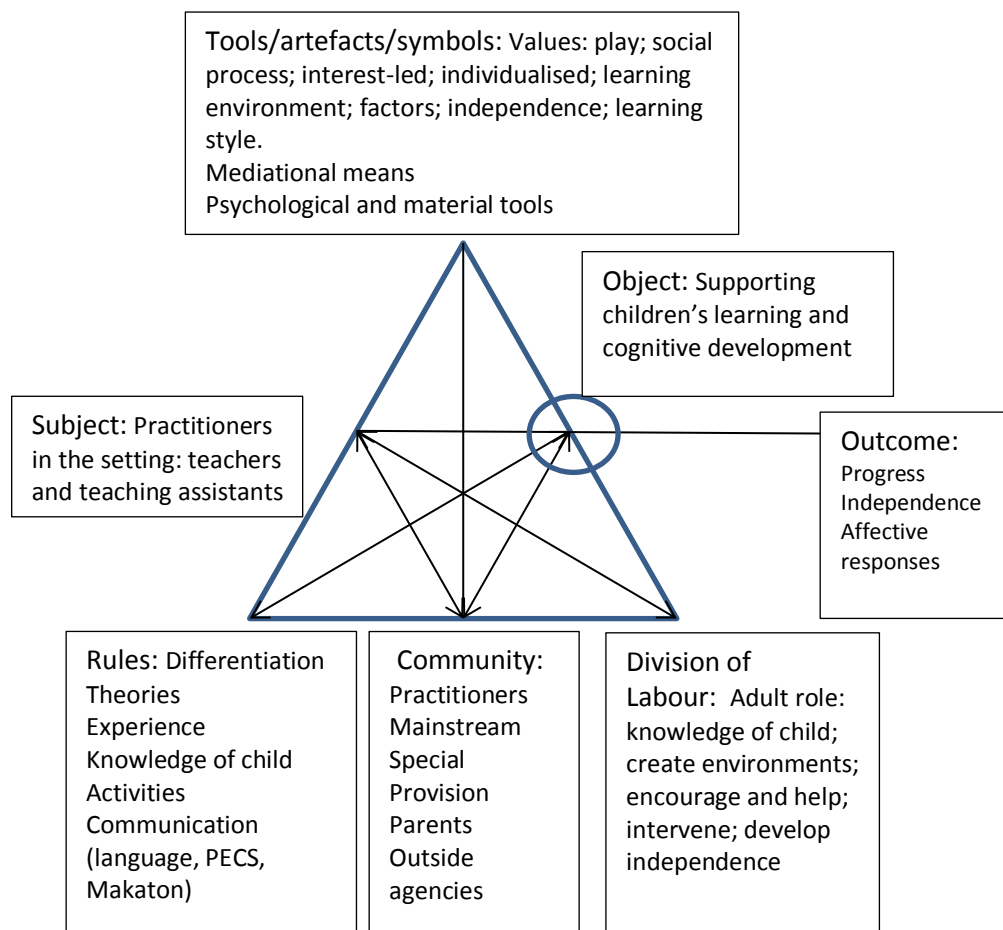
This shows that practices in the nursery were mediated by:

- Tools, such as EYFS, IEPs, reports from outside agencies, planning, assessment;
- Values, such as continuous provision;
- Collaboration to co-construct the practice;
- Rules associated with the routines, experiences of practitioners and differentiation according to needs and interests;

- Community of those participating in the nursery: practitioners and children and the wider community of parents and outside agencies;
- Adult role in relation to the needs of individual children.

The activity system shows the range of factors that might influence practice in nursery.

Pedagogy in relation to Learning and Cognitive Development as an Activity System



(Based on Engeström, 1999)

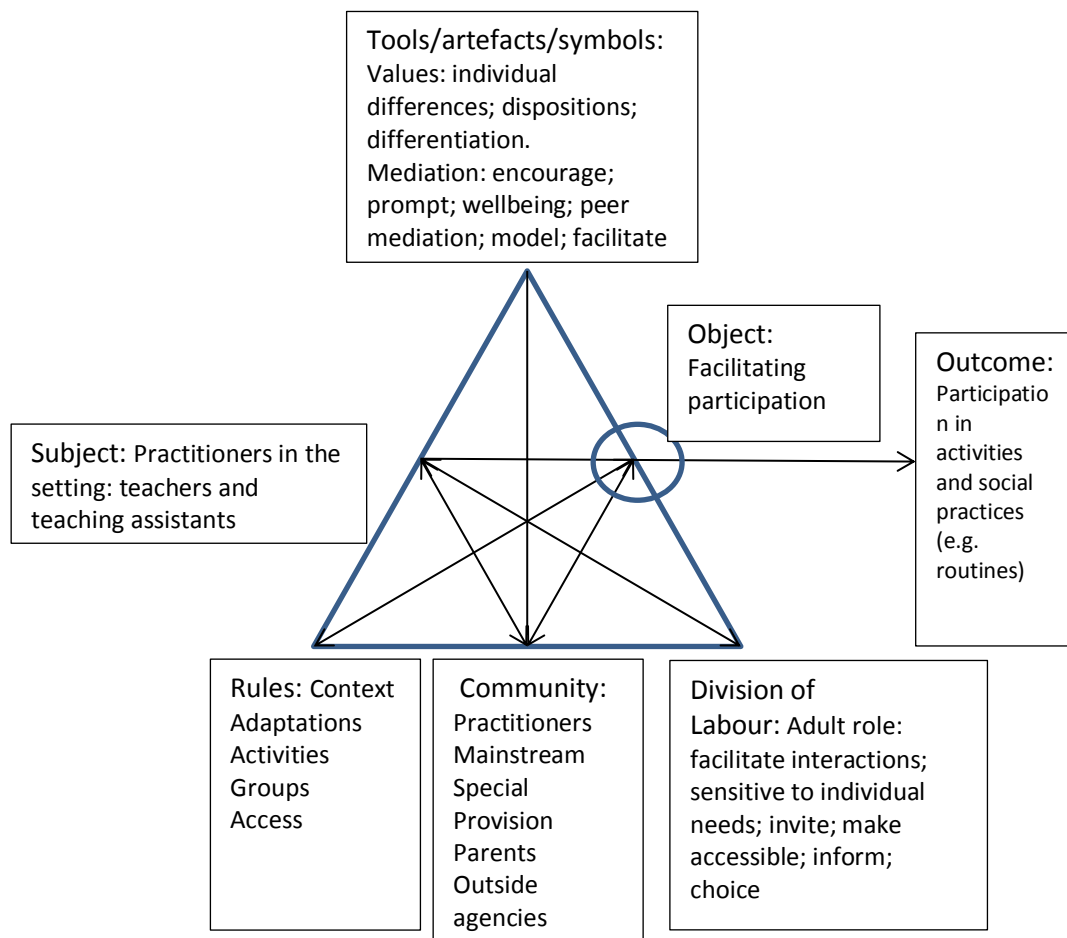
This shows that learning and cognitive development was mediated by:

- Values about learning and cognitive development, including regarding it as a social process, situated in play and interaction with others;
- Meditational means used in MLEs with children.
- Tools: psychological (language) and material (objects) that practitioners introduce into learning situations and interactions with children to support learning.
- Rules relating to how activities are differentiated. This could be influenced by theories about children's development, experience and knowledge of individual children.

- Communication strategies that support children to learn the rules of language and interaction.
- The community of practitioners and children and the wider community of parents and outside agencies involved with children in nursery.
- Division of labour associated with roles.

The activity system shows the complex interaction between factors that contribute to and mediate learning and cognitive development in nursery.

Pedagogy in relation to Participation as an Activity System



(Based on Engeström, 1999)

This shows that participation was mediated by:

- Practitioners values about individual differences, including views about learning and cognitive development and dispositions.
- Mediational means used to encourage and facilitate interaction.
- Wellbeing of children.

- Rules associated with the adaptations needed to ensure environments, resources and activities are accessible.
- Rules associated with where children participate: mainstream or special provision.
- Community of practitioners, children, parents and outside agencies, as well as the different groups that children participate in (mainstream or special provision).
- Division of labour associated with the adult role: what adults are expected to do to facilitate participation.

5.1.3 Conclusions

This indicates that participation is a dynamic process and a consequence of interaction between a range of factors. Subtle changes in practice or approach might affect individual children's participation and opportunities for them to contribute to the community of practice.

Representing the pedagogy as an inter-connected, inter-related activity systems suggests it is a dynamic process, subject to change and development over time. The research findings captured the pedagogy at a given point in time.

The diagrams showing activity systems could be used to reflect on and evaluate the pedagogy and factors that might influence it using the themes identified from this research

5.2 Pedagogy within the Interpersonal Plane

5.2.1 Key Findings

The findings suggested the pedagogy within the Interpersonal Plane could be described in terms of:

- Activity characteristics
- Adult role
- Mediation
- Child response
- Situation definition
- Learning and cognitive development

Key findings included:

Activity Characteristics

- Activities were significant to the culture: the culture of formal education for children without AN and developing social skills, communication skills and conventional actions in play to facilitate participation in wider society.
- Activities with children without AN involved representing significant aspects of the culture as models or in writing (books). Activities with children with AN focused on developing goal directed actions and exploring in play.
- Activities created ZPD for individual children. For children without AN, these created opportunities to higher psychological functions (Vygotsky, 1978, 1986), such as problem-solving and reasoning as well as curriculum skills. For children with AN, these created opportunities to regulate and control lower psychological functions (Vygotsky, 1978, 1986) such as attention, perception and memory.

Adult Role

- Practitioners co-constructed the activity with children without AN to guide their learning; they intervened between the child with AN and the activity to mediate learning.
- Practitioners supported and guided children without AN to develop problem-solving and reasoning and a scientific approach. This suggested children developed higher psychological functions (Vygotsky, 1978, 1986) and/or executive functions (Bøttcher, 2011).
- Practitioners supported children with AN to focus attention, share joint attention, use their senses, develop goal directed actions and more systematic exploration in play. This suggested they enabled children to bring attention, perception and memory into voluntary control (Daniels, 2005).

Mediation

- Practitioners used a range of mediation. There were qualitative differences in the mediational means used for children without AN and children with AN.
- Mediation was part of the learning conversation between practitioners and children without AN. Mediation was a significant, consistent aspect of the interaction between practitioners and children with AN.
- Language was a significant mediational means for all children. This was differentiated according to needs.
- Language was used to develop scientific concepts, problem-solving and reasoning and language used for thinking with children without AN. Practitioners externalised the language they used for thinking to model this and enable the child to appropriate this. Language seemed to be used as a psychological tool to develop scientific concepts and higher psychological functions, used between the practitioner and child (intrapsychological) prior to internalisation of language for thinking (interpsychological). This seemed consistent with Vygotsky's (1978) proposition.
- Language was used to label and prompt actions with children with AN. Practitioners provided a narrative describing actions and the effect. Language seemed to be used as a tool to 'control' or 'guide' perception, attention and memory, helping the child to focus attention, notice detail and apply this to other situations.
- The mediational means used in the interactions between practitioners and children with AN seemed consistent with Klein's (2000) findings: focusing attention,

modelling affect, encouraging, expanding the child's understanding and frame of reference and regulating behaviour.

- Practitioners working with children with AN often combined mediational means. Mediation was an intensive and frequent aspect of the interaction.

Child Response

- All children seemed to be active learners: involved in investigating and pursuing their interests.
- Practitioners responded to all children as if they were 'active meaning makers' (Nind et al, 2010; p.653).
- Children without AN shared their activity with practitioners. They followed practitioner's lead and introduced their own activity appropriately.
- Children with AN needed significantly more guidance, repetition and intervention to respond to the adult's lead and to develop responses. Joint attention seemed transient: they shared joint attention briefly before resuming their own play. This might limit opportunities to mediate learning and therefore development over time.

Situation Definition

- Children without AN were able to relinquish their situation definition in favour of the adults. They could share the same situation definition to provide the context or intersubjectivity for mediation of learning.
- There was evidence of 'graduated participation' (Rogoff and Gardner, 1999, p. 102) during which the responsibility for the activity shifted from the adult to the child. The practitioner initiated the activity and the child joined in. The child was able to do more of the activity independently or introduced new developments.
- Children with AN needed more intervention and mediation to share the adult's situation definition. This seemed to be transient and intersubjectivity or joint attention was brief. This could limit opportunities for mediation learning and transfer of responsibility of the activity from the adult to the child to develop independence as a learner.
- Practitioners created a succession of ZPDs adapted to the responses of children with AN to establish joint attention and maintain their involvement.
- Practitioners enabled children with and without AN to follow their interests. Practitioners adapted activities to follow the interests of children with AN to establish a shared situation definition.

Learning and Cognitive Development

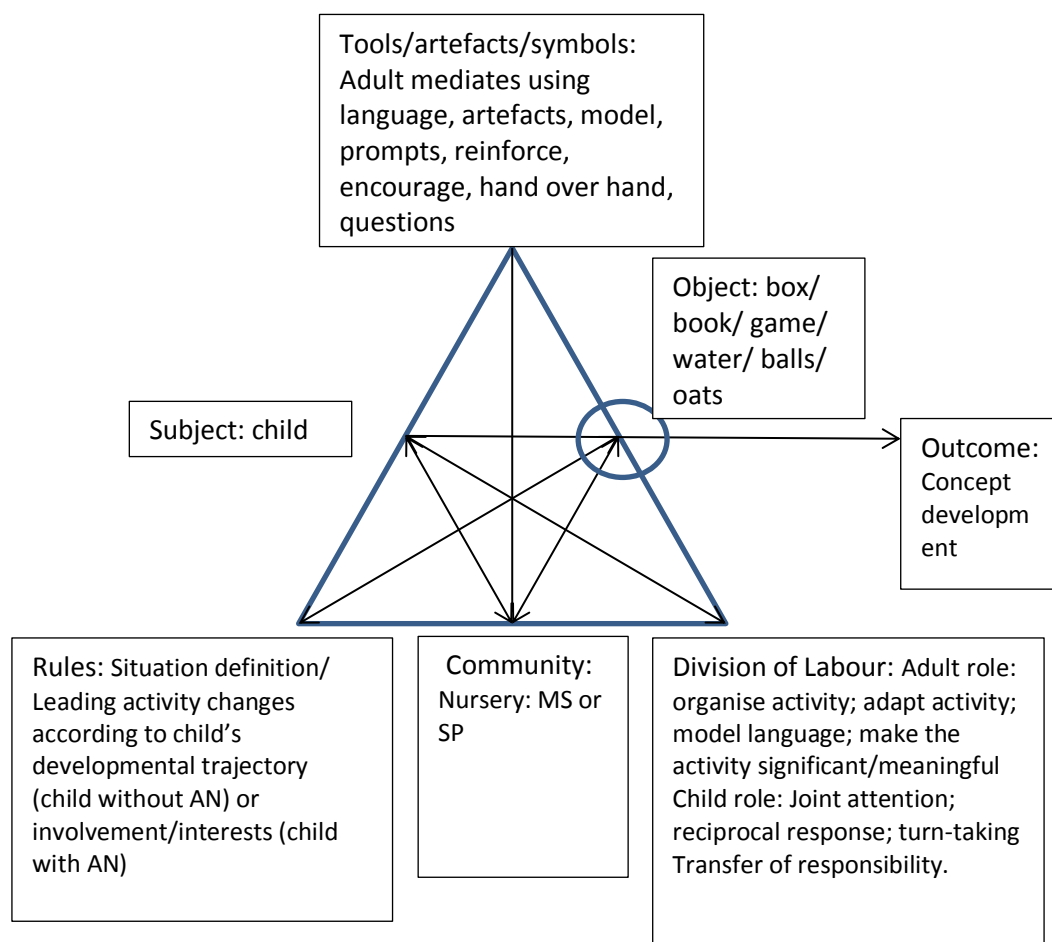
- Activities seemed to encourage children to develop a 'scientific approach': estimating, predicting and inferring for children without AN and adopting more systematic exploration for children with AN.
- Children without AN seemed to develop higher psychological functions, such as problem-solving and reasoning, particularly verbal reasoning and scientific concepts, including size, shape, volume and decoding.
- Children with AN needed guidance to develop cognitive functions, such as attention control, perception and memory.
- Language was used as a psychological tool to develop thinking and reasoning with children without AN.

- Children with AN were encouraged and supported to act on objects in more systematic ways, showing an understanding of their function or purpose or in more conventional ways, understanding rules associated with a game.
- Pedagogical interactions between practitioners and children with AN also mediated social communication and affective development. These might be necessary to achieve intersubjectivity and a shared situations definition as the context for mediating learning.

5.2.2 Applying Conceptual Frameworks

Cultural Historical Activity Theory (CHAT) (Engeström, 1999) was used to represent the MLEs as activity systems to show the mediating effects of different elements identified from the findings:

Activity System for MLE for Children without AN and Children with AN



(Based on Engeström, 1999)

This shows the interaction between the child and the object and the intervention of the adult between the child and object to mediate learning.

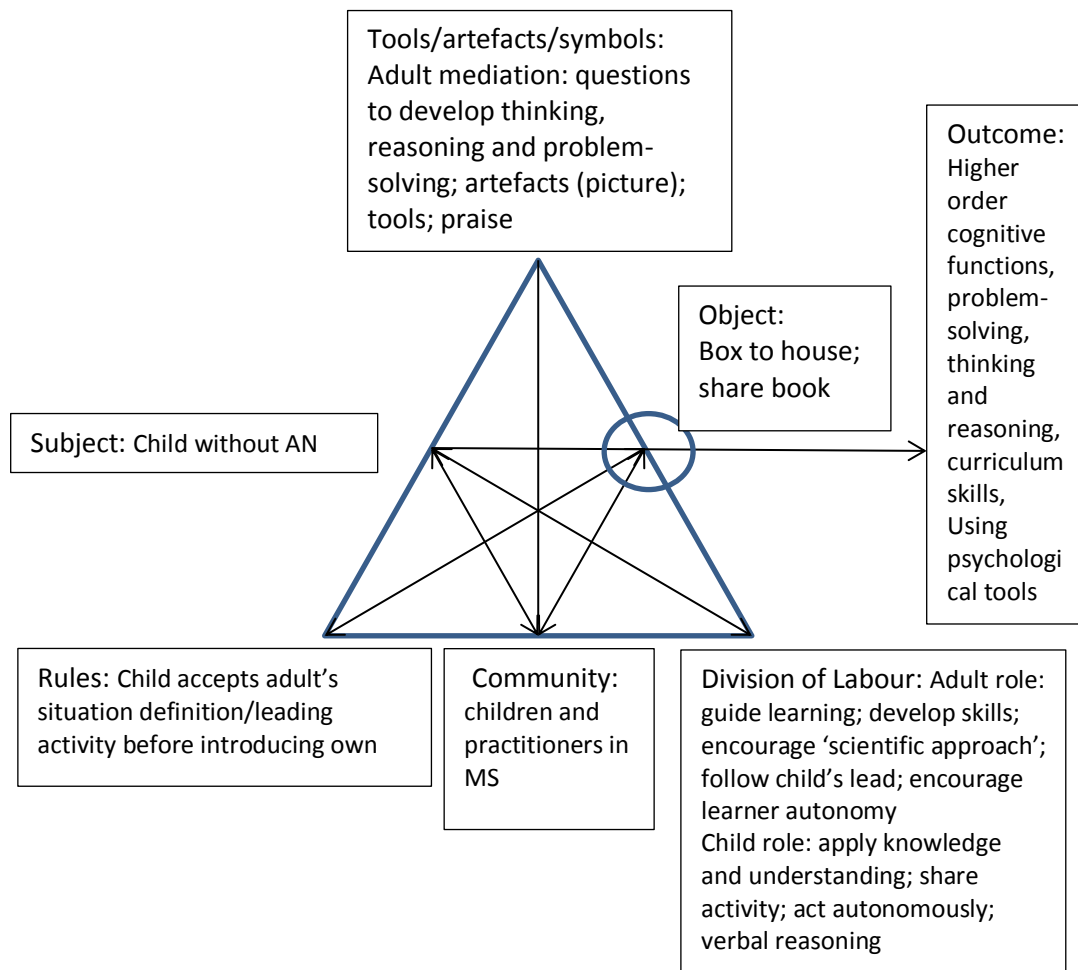
The child acts on the object in ways that demonstrate their everyday concepts or that reflect their actual development. The practitioner intervened to mediate these actions using a range of mediational means, differentiated according to the child's needs.

The MLEs were observed in the sociocultural context of the nursery. The interaction between the child and object was also mediated by:

- Rules associated with changes in the situation definition so that a shared situation definition and intersubjectivity is established to provide the context for mediating learning. The extent to which this was achieved depended on the needs of the child.
- Community: context in which the MLE was observed (mainstream or special provision).
- Division of Labour: the relative roles of the adult and child negotiated between them through the interaction, included transfer of responsibility as a consequence of guided participation.

Activity systems were also created to show the MLE between practitioners and children without AN and practitioners and children with AN.

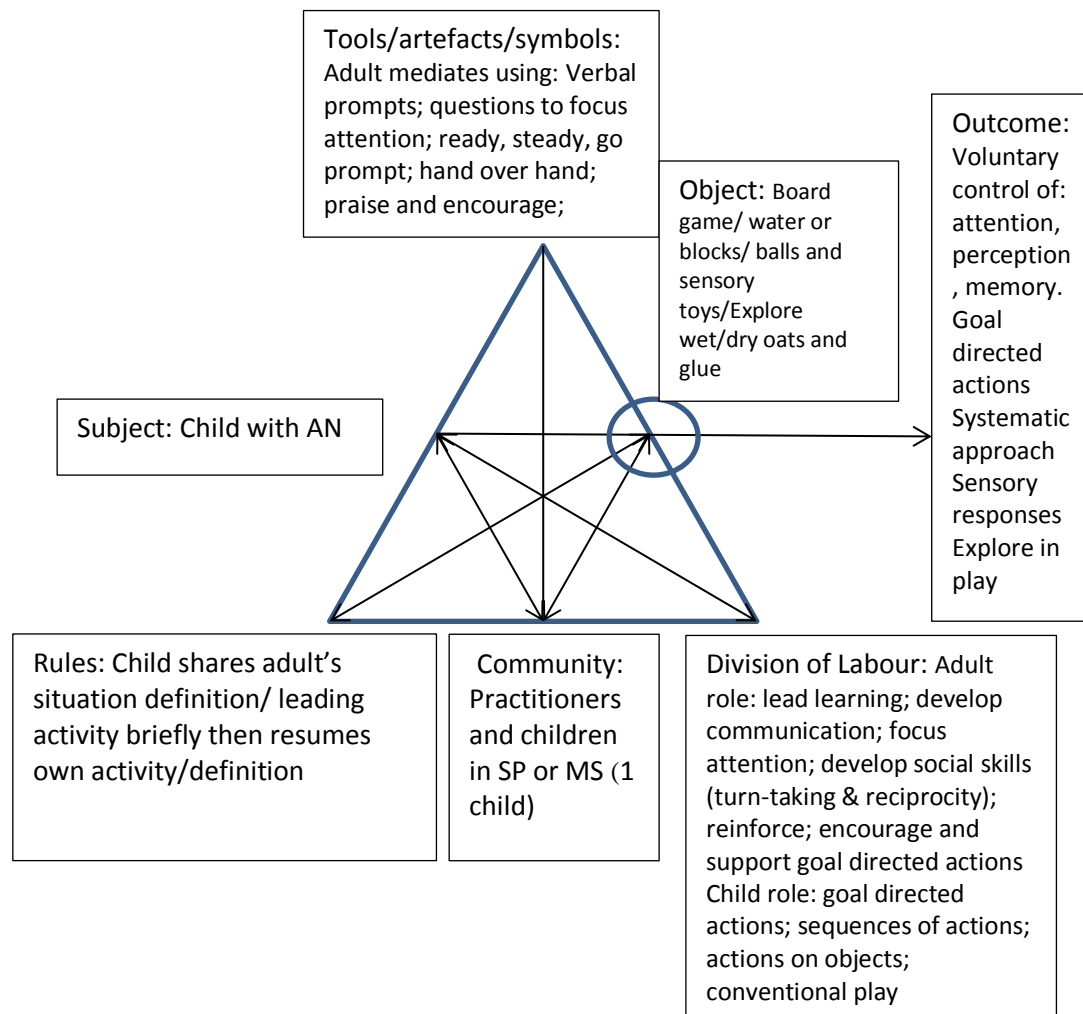
Activity System to show MLE between Practitioner and Child without AN



(Based on Engeström, 1999)

- In this activity system, the child's play is mediated by the practitioner introducing psychological tools (language and artefacts) to help the child to apply knowledge and develop understanding.
- This is mediated by the intersubjectivity created when the child accepts the 'rules' or the practitioner's situation definition and the practitioner guides the child's participation to shift responsibility for the activity from the practitioner to the child through a series of transformations in the division of labour.
- This is in the context of the community of practice within MS that might include practitioners' constructs about learning and cognitive development expressed as values in the interviews with practitioners.

Activity System to show MLE between Practitioner and Child with AN



(Based on Engeström, 1999)

- This activity system shows the child's actions on objects mediated by more direct prompts, guidance and intervention from the practitioner to develop these actions towards more conventional play and to help the child control and apply cognitive functions.
- This happens when the child shares the practitioner's situation definition, accepting the practitioners' 'rules' that create the context for intersubjectivity.
- The division of labour refers to the reciprocal responses that develop through this interaction, providing the interpersonal context for shared activity and mediation.

5.2.3 Conclusions

The findings suggested that the pedagogy within the interpersonal plane could be described and understood with reference to Vygotsky's (1978) theory and developments from it within the sociocultural approach that contextualises pedagogical interactions within the wider community of practice.

MLEs could be represented as an activity system and the processes of mediated learning could be represented as networks of activity systems, as suggested by Engeström (1999) and Daniels (2001). The pedagogy within the interpersonal plane could be regarded as a dynamic network of activity systems representing pedagogical interactions between practitioners and children, and children and their peers.

Pedagogical interactions between adults and children might be mediated by the interventions of adults and the mediational means they use: psychological and material tools (Vygotsky, 1978) and the characteristics of the adult in terms of their scientific concepts, knowledge of the community and the culture, and the characteristics of the child in terms of their concept development, social, affective and communicative responses that mediate their involvement. This enables the pedagogical interactions to be differentiated to the needs of the individual, suggesting that the pedagogy within the interpersonal plane is both common and unique (Corbett and Norwich, 2005; Lewis and Norwich, 2007).

5.3 Pedagogy within the Personal Plane

The findings suggested the pedagogy within the Personal Plane could be described in terms of:

- Routine
- Context
- Activity
- Child's role
- Adult role
- Interactions

The extent to which these were shared by children with AN and children without AN could indicate the extent to which children are able to participate in the practices and pedagogy of the nursery.

5.3.1 Key Findings

The key findings included:

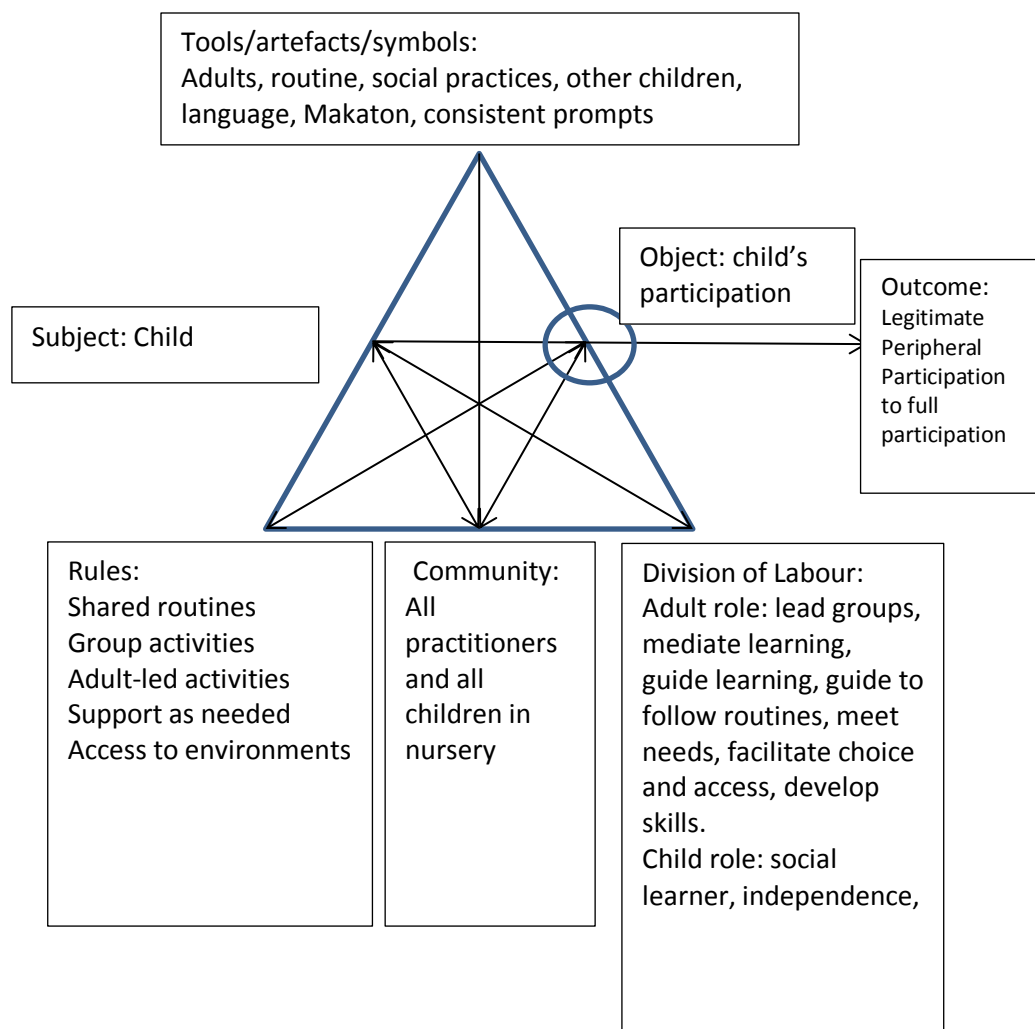
- There were shared routines and practices.
- The child without AN mostly accessed and participated in activities independently. She seemed to be an autonomous learner.
- The child with AN needed adult mediation to access and participate in activities and social interactions.
- The child without AN participated in culturally significant activities that involved representing the culture: role playing in the home corner, construction and making a card.
- The child with AN participated in activities to develop communication and interaction as well as to support cognitive development.
- The child without AN participated in a range of social contexts and settings.

- Most of the child with AN's interactions were with the practitioner supporting him and in the special provision. This could affect access to the dominant culture.

5.3.2 Applying Conceptual Frameworks

Cultural Historical Activity Theory (CHAT) (Engeström, 1999) was used to represent the participation to show the mediating effects of different elements identified from the findings:

Activity System for Participation



(Based on Engeström, 1999)

- Participation was mediated by the relative roles of adults and children, the shared routines and activities and intervention by the adult.
- Practitioners mediate the participation of children with AN. This includes using alternative forms of communication (Makaton) that support social interaction and facilitate access to the culture mediated by language.

- Participation is governed by rules relating to the routines, group activities, adult-led activities and the accessibility of the environment. This can limit or enable participation.
- The role of the adult is to create opportunities for participation, mediating learning, facilitating interactions and helping the child with AN to follow routines. As a consequence, the child's role and contribution to the community of practices is enhanced. This enables the child to move from Legitimate Peripheral Participation to full participation via a process similar to the graduated participation described by Rogoff and Gardner (1999).

5.3.3 Conclusion

The findings suggested that participation might be facilitated by the shared, routines and social practices across the nursery.

All children could be regarded as active participants and members of the community of learners in nursery. Children without AN might achieve full participation over time, as evidenced by their independence with social practices (e.g., routines) activities, interactions and the level of autonomy in the nursery. Children with AN might need adult support to mediate their participation: making the social practices, activities and interactions accessible to them.

The context in which children participate might affect their access to these social practices, activities and interactions that are representative of the wider culture, particularly formal education. This suggested the need to ensure consistency and/or share practice across the nursery as a common pedagogy to facilitate participation.

Participation was regarded as an indicator of inclusion. The findings suggested that children without AN might become included through their participation whereas for children with AN, inclusion needs to be a process that is actively engaged with and mediated by practitioners and members of the community of practice in the nursery.

5.4 Findings in relation to Research Questions

The findings as they relate to the research questions to explore the mediation of learning and cognitive development and participation between the Planes.

5.4.1 How can sociocultural conceptual frameworks and constructs developed from Vygotsky's (1978) theory be applied to investigate the pedagogy in the nursery?

Rogoff's (1995) Three Planes of Analysis was used to guide the data collection, analysis and interpretation. It was used to describe the pedagogy at three levels:

- 1) Community: the collective organisational level. This was described in terms of the everyday practice, values, adult role, mediation and outcomes in relation to practice, learning and cognitive development and participation. It was felt the descriptions of the practice, values and mediation of learning regarded learning and cognitive development as a social process and situated practice and pedagogy within social contexts and interactions. This seemed consistent with

Vygotsky's (1978) theory, suggesting it was appropriate to use a sociocultural approach to the study of pedagogy in nursery.

CHAT (Engeström, 1999) was used to show the pedagogy as a complex, dynamic system.

- 2) Interpersonal: the MLEs that were felt to be a feature of the practice as these seemed to represent SSTs (Sylva, et al., 2004) a significant feature of EY pedagogy. These could be described in terms of the activity characteristics, adult role, mediation, child responses, situation definition and learning and cognitive development.

The findings suggested that MLEs (Kozulin, 1998) could be usefully applied to describe the pedagogical interaction between practitioners and children.

There was evidence that practitioners intervened to mediate learning and cognitive development so that children without AN developed higher psychological functions and scientific concepts and children with AN developed control of lower psychological functions. This seemed consistent with Vygotsky's (1978, 1986) descriptions of the process associated with learning through social interaction.

CHAT (Engeström, 1999) was used to represent the MLE as an activity system to show the dynamic processes involved.

- 3) Personal: there seemed to be evidence the children with AN might participate at the edges of the community of practice, whilst children with AN might participate more fully and contribute to practices within the nursery.

The findings suggested that Lave and Wenger's (1999) description of legitimate peripheral participation might be relevant to describe inclusion in nursery and the processes associated with it. Sociocultural factors, such as the extent to which routines and practices are shared might facilitate participation.

CHAT (Engeström, 1999) was used to represent participation as an activity system: a process that can be actively engaged with and influenced by the actions of practitioners and co-construction of the pedagogy.

These findings suggested that the conceptual frameworks considered provide useful means of describing and representing the pedagogy in nursery and the mediation of learning and cognitive development.

The pedagogy could be represented by interconnected activity systems within and between each Plane.

5.4.2 How might the pedagogy mediate learning and cognitive development?

Practitioners descriptions of the pedagogy in relation to learning and cognitive development within the Community Plane and observations of the MLEs within the Interpersonal Plane suggested that the pedagogy might mediate learning and cognitive development by creating

environments, providing resources and pedagogical interactions that create ZPD's helping all children to develop everyday concepts toward scientific concepts and higher psychological functions.

5.4.3 How might the pedagogy mediate inclusion in terms of participation of all children across the setting?

Practitioners' descriptions of the pedagogy in relation to participation within the Community Plane and observation of children within the Personal Plane suggested that the pedagogy might mediate inclusion by creating opportunities for the child to access the culture through consistent, shared routines, environments, social practices and activities that enable children to participate together. This might enable children to move from Legitimate Peripheral Participation to become full members of the community of practice (Lave and Wenger, 1999). This was supported by practitioners creating accessible environments and activities and facilitating interaction between children.

Inclusion and inclusive practice seemed to be valued by the practitioners. There seemed to be a culture of acceptance of individual differences whether according to ability or interests. Practitioners seemed to regard all children as active meaning makers (Nind, et al., 2010) with interests they wished to pursue.

Practitioners suggested that the context influenced participation and environments that allowed children the freedom to pursue their interests and learning in a flexible way and according to their needs were felt to provide opportunities for inclusion.

The pedagogy seemed to mediate inclusion by encouraging and enabling children without AN to participate in and contribute to the social practices, activities and interactions independently and by supporting children with AN to develop their participation and contribution over time. This included mediating social, affective and communicative responses

5.4.4 How do practitioners mediate children's learning and cognitive development and their inclusion in terms of their participation?

Evidence about practitioners' role and the mediation of learning and cognitive development within the Community and Interpersonal Planes, and evidence about their role and mediation of participation within the Community and Personal Planes suggested that practitioners created environments, provided resources and pedagogical interactions to mediate learning and participation.

They created ZPDs for individual children and groups. Practitioners intervened directly to promote learning and participation for some children without AN and most children with AN. They created MLEs based on children's interests as the context for mediating learning and cognitive development.

Practitioners identified their primary role as supporting and facilitating learning by enabling children without AN and assisting children with additional AN. They encouraged children to become independent learners and adapted the support or mediation given to facilitate this. They supported children to engage with activities, interactions and facilitated access. They

encouraged children to share the activities and help each other. They also modelled the social skills needed to participate in the setting.

Practitioners seemed to have a repertoire of mediational means they could adapt to the needs of the individual. Language was significant: using open ended questions to prompt thinking, reasoning and problem-solving for children without AN and modelling vocabulary and using specific prompts to focus attention to encourage children with AN to act on objects in conventional ways.

Although children were encouraged to learn and participate autonomously, practitioners were available to interact and intervene as felt appropriate. This included social conversations, making suggestions or modelling solutions for children without AN and direct interaction and intervention for children with AN to mediate their access and participation as well as learning and cognitive development.

Practitioners created the social practices in terms of the routines and 'customs' of the nursery. They mediated children's access to the culture of the community of learners, the local community (families) and the wider community of formal education. They guided children's activity to enable them to develop the knowledge and skills needed to participate in the wider community. For children with AN, this included developing their actions towards more conventional play (Rodriguez and Moro, 1999, cited by Van Der Veer, 2008).

5.4.5 How might practitioners' constructs about young children's learning and development inform the pedagogy in terms of the mediation of cognitive development and inclusion?

It was suggested that practitioners' constructs were evident in their espoused values about learning and cognitive development and participation and realised in their practice as observed during the MLEs and children's participation in the sessions.

Collaboration, teamwork and working together as a community seemed to be important constructs. Practitioners encouraged children to share and help each other, problem-solving in play or including each other. Practitioners' responses suggested that they endeavoured to create a culture of acceptance, recognising and responding to individual differences.

Children's independence as learners also seemed to be significant. Practitioners encouraged and enabled children to become independent learners, following their interests.

Practitioners felt learning should be fun and enjoyable. They wanted to excite and involve children in their learning. They valued children's wellbeing, as evidenced by their emphasis on children's affective response to evaluate sessions, encouraging children's self-efficacy and autonomy and ensuring that children with AN felt comfortable, safe and secure.

Learning for adults and children was regarded as a social process. Practitioners developed their practice or 'craft' by participating with colleagues, problem-solving together, sharing practice in planning and consulting with each other. They modelled the collaborative problem-solving that they felt supported and enabled children to learn. They created MLEs

that enabled children to learn with and from adults or other children for children with AN and through pedagogical interactions with practitioners for children with AN.

Practitioners seemed to value inclusion. They regarded inclusion as having benefits for all children and indicated they were committed to developing inclusive practices.

Although practitioners regarded learning as led by children's interests and through play, they felt this should be balanced with opportunities created by adults that offered different learning trajectories, based on practitioners' knowledge of the culture and scientific constructs. For children without AN, it was recognised that practitioners needed to intervene to support development from 'everyday' concepts: the child's knowledge and experiences by providing resources and creating environments that offered children opportunities to develop 'scientific' concepts. For children with AN, practitioners felt they needed to intervene to encourage children to engage in a wider range of activities that included non-preferred activities so that they could develop a wide repertoire of skills.

6 Conclusions

This section will suggest some conclusions from the research into the pedagogy in the nursery and ways in which it might mediate learning and cognitive development and participation of all children attending the nursery: children with and without AN.

This was a small-scale case study into the pedagogy in a particular nursery with provision for children with severe and complex AN. It captures the pedagogy and mediation of learning and cognitive development and inclusion at a particular point in time. The findings are not necessarily generalisable to other settings or to other points in the nursery's history and development.

A 'rich description' of the pedagogy in relation to learning and cognitive development and participation was provided using Rogoff's (1995) Three Planes of Analysis to consider the pedagogy at three levels: Community, Interpersonal and Personal.

The pedagogy within the Community Plane could be described in terms of: everyday practice, values, adult role, mediation and outcomes in relation to practice, learning and cognitive development and participation.

It could be represented using CHAT (Engeström, 1999) to show the dynamic processes involved.

There seemed to be evidence of a common pedagogy: a shared pedagogy across the nursery as well as an individual pedagogy that responded to the needs and interests of individual children. This was consistent with findings from research into inclusive pedagogy (Corbett and Norwich, 2005; Lewis and Norwich, 2007).

The pedagogy within the Interpersonal Plane was studied by focusing on MLEs (Kozulin, 1998) used to represent SSTs (Sylva, et al., 2004). It could be described in terms of activity characteristics, adult role, mediation, child responses, situation definition and learning and cognitive development.

It could be represented using CHAT so that the processes involved could be surfaced and described.

MLEs seemed to create a shared situation definition and intersubjectivity so that adults and children were working on the same activity together. This created the context for mediation of learning and cognitive development. For children without AN, this seemed to be mediation of higher psychological functions, such as problem-solving and reasoning skills as well as scientific concepts associated with formal education. For children with AN, this seemed to be mediation of lower psychological functions, such as attention, memory, and perception, helping children to bring these under voluntary control so that they form meaningful associations that might be the basis for cognitive development.

The shared situation created the interpsychological space: learning between the adult and child that transforms into the intrapsychological space: mental representations within the child.

The pedagogy within the Personal Plane was studied by observing two children's experiences in nursery: a child with AN and a child without AN. It was described in terms of the routine, context, activity, child's role, adult role and interactions that the children participated in.

The findings suggested that shared routines and practices might facilitate participation through access to the shared culture. For children with AN, this might be mediated by practitioners.

Participation was shown as an activity system using CHAT to show the contextual factors that might influence inclusion. This included the explicit and implicit rules that determine the extent to which the routines, activities and access facilitated participation and the division of labour that referred to the relative roles of the adult and child and the shift in the child's contribution to the community of practices through graduated participation.

It was felt that a 'rich description' of the pedagogy could be provided by showing it as an interconnected network of activity systems within and between Rogoff's Three Planes.

The research demonstrated the value of the conceptual frameworks developed from Vygotsky's (1978) theory to describe and represent the pedagogy in a maintained nursery with provision for children with AN.

- Rogoff's (1995) Three Planes of Analysis proved to be a unifying conceptual framework allowing the pedagogy within each plane to be explored, whilst suggesting the mediating effects of the pedagogy within and between planes.
- CHAT (Engeström, 1999) was used to represent the pedagogy within each plane and to suggest the inter-relatedness of the planes by describing the pedagogy as a network of interconnected activity systems.
- Principles from Vygotsky's (1978) theory and MLE could describe and explain cognitive development within the community plane and interpersonal plane.
- Lave and Wenger's (1999) description of participation in social practices proved a useful framework for exploring inclusion and the extent to which individual children might be included in the setting within the personal plane.

The pedagogy seemed to mediate learning and cognitive development and children's participation by providing a sociocultural context conducive to this and creating ZPDs for all children. This included the environment, social practices, activities, resources and interactions that constituted the pedagogy.

Practitioners created ZPDs to support cognitive development using their knowledge and understanding of the child. This was co-constructed through collaborative activity that involved the wider community of practice: parents and outside agencies.

They also created the social practices, routines and 'customs' in nursery that mediated access to the culture and participation of all children.

Their constructs about learning and cognitive development and inclusion determined how accessible these were and the extent to which children with AN could participate

independently and contribute to the community of practice. Practitioners endeavoured to create a culture of acceptance. A guiding construct for the pedagogy was that children learn through play with others.

Future Developments

The findings from the research could be used to inform practice and pedagogy in the nursery.

- They could be used to inform a review and evaluation of the pedagogy in nursery in the future. Rogoff's (1995) Three Planes of Analysis could be used to focus the review on the characteristics identified within each Plane and to explore the inter-relationships between the planes.
- They could inform a review of inclusive practice by considering the extent to which children participate in the setting and the practices are shared across the nursery to facilitate this.
- CHAT (Engeström, 1999) could be used to represent pedagogical interactions or SSTs to enable practitioners to reflect on the processes and mediation they use, and the extent to which these are differentiated to take account of individual needs.
- Lave and Wenger's (1999) description of participation could inform development of inclusive practices that enhance the participation of all children. This could include further development of shared routines and practices and a common pedagogy.
- They could inform differentiation of activities to support inclusion. This could include providing activities and mediation differentiated to support children with AN to develop lower psychological functions: attention, memory and perception and children without AN to develop higher psychological functions such as problem-solving and reasoning.
- They could form the basis of training in relation to mediation to support practice in relation to learning and cognitive development, complementing pedagogical approaches used.
- Further information about the pedagogy and mediation could be collected through a collaborative action research project between the nursery and the educational psychologist.

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