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What Are Four-Year-Olds Doing At School?

Reconciling current knowledge about learning in young children with early educational pedagogy

Nóirín Hayes

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Submitted in fulfilment of the requirements for the award of PhD,
Trinity College Dublin

May 2004

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'Grown-ups never understand
anything by themselves,
and it is tiresome for children
to be always and forever
explaining things to them'
(from *The LittlePrince* by
Saint-Exupery, pp. 8/9).

'Children learn when they are empowered
in their interactions with others .....
participating in shared cultural practices.
Such practices include
solitary activities ... but by and large
they are interpersonal practices
that require co-operation'
(Packer, 1993, pp. 264)

Declaration:

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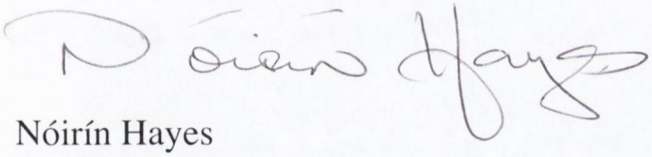

Nóirín Hayes
October, 2003

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Summary of the thesis:

The title of the thesis is '*What are four-year-olds doing at school? Reconciling current knowledge about learning in young children with early educational pedagogy.*' The study addresses the question of four-year-olds at school on two levels. On the one hand, the study describes what four-year-olds are doing at school. Using data from the IEA Pre-primary Project[1] the author provides information on parental and teacher expectations for 203 four-year-olds and presents details of the observed behaviour of the children and their teachers in school. Some of this data has been reported elsewhere (Hayes, O'Flaherty and Kernan, 1997). Substantial additional analysis has been carried out to provide greater detail on social interactions in the classrooms including matrices to allow for an examination of the degree of match between teacher planning and child behaviour.

In addition to the direct question of what Irish four-year-olds actually do at school the thesis also considers the question of *whether* four-year-olds should be in primary school. In this connection it presents, analyses and discusses the child activities recorded, the observed adult behaviour and the management of time in the classroom in the context of an extensive review of psychological and educational research.

The unique contribution of this thesis to early education in Ireland can be seen on a number of levels. In the first place it argues, by reference to research, that the case has been made for the support of quality early education as a unique and separate level of education along a continuum of lifelong learning. It further argues that there is ample research isolating those factors which constitute quality early education. Through the literature review this thesis extends beyond these conclusions by addressing why quality early education is effective and desirable for young children. Drawing on psychological research it concludes that quality early education is effective, in the short and long-term, because of the interactive nature of the pedagogy and its effect on development. It supports this assertion by reference to psychological findings on the role of interactions in development and educational research on the impact of interactions on learning.

Secondly, the argument of the thesis is that educators, whether teachers, academics or policy makers should expand their consideration of what early education should provide

[1] The IEA Preprimary Project is a longitudinal cross-national study of early childhood care and education. The author is the National Research Co-ordinator for this project in Ireland (1994-present)

for children by including attention to affective development and the nurturing of learning dispositions. The proposal that generative learning dispositions are critical to early and future learning is supported by reference to contemporary psychological and educational literature. In particular, the link to developmental psychology is made through the identification of the central relationship between dispositions, proximal processes (close day-to-day interactions) and the progress of development. This study proposes that generative learning dispositions can be developed within the early years setting when the teacher is sensitive to fostering and guiding their development. For this to happen, it argues, teachers need an awareness of what learning dispositions are, an understanding of why they are important to development and learning and a pedagogy that fosters their development in early learning environments through the explicit acknowledgement of the educative nature of care. To facilitate this the thesis proposes a mechanism to make psychological research more relevant to educational practice and to inform psychological research by reference to practice. In this regard the thesis proposes that the bio-ecological model of development (Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Morris, 1998) provides a useful framework at both a theoretical and a practical level.

Thirdly, in the context of the limited research base on early education in Ireland (Walsh, 2003) this thesis contributes an important addition. Using a complex research design the thesis provides comprehensive data on what parents and teachers expect of four-year-olds and details on what actually happens in the primary school classrooms these four-year-olds are attending. There is original analysis presented in this work, particularly in relation to social interactions within the classroom and the interaction between certain setting variables.

Finally, this work contributes to the current debate on early education in Ireland by presenting and defending a unique integration of the literature review and empirical data at a time when early education continues to be characterised as a period of preparation for school (Coolahan, 1998; Ireland, 1999a; 1999b). The thesis concludes that what four-year-olds are doing at school relies too much on the traditional view of development towards the acquisition of skills and knowledge, reflects limited active participation by children in their own learning, highlights the dominance of a traditional, didactic teaching style and indicates a limited recognition of the importance of developing skills of learning through planning for the development of learning dispositions. It provides recommendations for future research, reformed pedagogy, curriculum development and teacher education.

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Abbreviations:

AB	Adult Behaviour
BELB	Belfast Education and Library Board
CA	Child Activity
CECDE	Centre for Early Childhood Development and Education
CCC	County Childcare Committee
CQO	Cost, Quality and Outcome study, US
CSER	Centre for Social and Educational Research
DAP	Developmentally Appropriate Practice
DD	Designated Disadvantaged
DES	Department of Education and Science (Ireland)
DfEE	Department for Education and Employment (UK)
DISTAR	Direct Instruction System for Teaching and Remediation
ECE	Early Childhood Education
ECEF	Early Childhood Education Forum (UK)
EECERA	European Early Childhood Education Research Association
ERC	Education Research Centre (St. Patrick's College)
ESAI	Education Studies Association of Ireland
EYCG	Early Years Curriculum Group
ICC	International Co-ordinating Committee
IEA	International Association for the Evaluation of Educational Achievement
INTO	Irish National Teachers Organisation
MOT	Management of Time
NAEYC	National Association for the Education of Young Children (US)
NCCA	National Council for Curriculum and Assessment (Ireland)
NDD	Non-Designated Disadvantaged
NICHD	National Institute for Child Health and Human Development
NRC	National Research Co-ordinator
OECD	Organisation for Economic Co-operation and Development

CHAPTER 1

Introduction to the Thesis

Introduction:

The seeds for this thesis were sown many years ago when Margaret Donaldson published her seminal book *Children's Minds* (1978). In this book she challenged educators and psychologists to explore why our education system seems to quench the curiosity and motivation of young learners. She described an early education setting as follows:

The scene is a small open courtyard, within a school building... There are paving stones, warm in the sunshine, and tubs bright with flowers. On top of a low wall a child is lying, propped up on her elbows, looking at a book with intense concentration. Near her another child is carefully watering the flowers, while a third is sitting with his back against the wall and a notebook on his knees..... All around the courtyard, inside the building, there are pleasant carpeted areas where many children are busily occupied in a variety of ways, while teachers wander among them, talking to them, smiling at them, encouraging their efforts.... In the first few years of school all appears to go very well. The children seem eager, lively, happy. There is commonly an atmosphere of spontaneity in which they are encouraged to explore, discover and create...' (1978, pp. 11-14)

The image of early education presented above was somewhat at odds with that reported for Irish children in typical junior infant classes at the time but was reflected, to some degree, in the principles of the Primary Curriculum (1971) which advocated a child-centred and integrated curriculum. This extract awakened an interest in how we educate young children in Ireland, how psychological research findings impact, or not, on day-to-day educational practice and, ultimately, influenced the research reported here.

As a developmental psychologist the extent to which psychology, particularly our understanding of how young children think and learn, impacts on the pedagogy of early education in Ireland, the experiences of children in early educational environments and the extent to which they are active participants in their own learning has been of particular interest and has fuelled the research presented in this thesis.

1.1 The National Context:

There has been a growth in attention to, discussion of and debate about young children in Ireland over the last decade, generated by, among other things, the ratification of the UN Convention on the Rights of the Child (1989) in 1992. This was followed by a number of policy initiatives, such as *Ready to Learn: The White Paper on Early Childhood Education* (1999a); the *Primary School Curriculum* (1999b) and the *National Childcare Strategy* (1999c) and *Our Children – Our Lives: The National Children's Strategy* (2000a). These policy documents all reflect a view of children that respects them as individuals with particular needs and rights (Ireland, 1999a; 1999b, 1999c, 2000).

In matters relating to the early educational needs of young children, Ireland has tended to remain fairly traditional in approach with a clear distinction being maintained between care and education (Hayes, 1995, 2001, 2002). Unlike the UK, Ireland did not have a system of nursery schools or classes within mainstream education. State responsibility for the education of 4 to 6 year old children has been through the junior classes of the state primary, or national, school system and as recently as 1990 a Review Board felt able to write that '*much of what is considered pre-schooling in other countries is already incorporated in the primary school system in Ireland*' (Ireland, 1990, pp. 72).

In certain exceptional circumstances where, for instance, there was concern about the welfare of the child or where a child had special needs the State has provided early childhood support for younger children and their families. Such services have tended to be limited to urban areas, to children of three-years or older and generally mediated through the Department of Health (Hayes, 1995). The Department of Education has funded a number of special initiatives for disadvantaged children of three years of age. The first special early intervention project, the Rutland Street Project, was opened in 1969 and still offers early education to a population of Dublin inner-city children and their families. The department has also grant-aided a number of pre-school groups for young Traveller children. In 1994 the Department of Education and Science initiated a pre-school intervention pilot project known as the Early Start Project. The programme was designed to be a preventative rather than a remedial intervention. This project supports up to 40 classes catering from 1,700 3-year old children. All Early Start classes are located in designated disadvantaged primary schools and are staffed by primary teachers with the assistance of childcare workers (Hayes, 2001).

Developments in the private and community-based early childhood care and education sector during the 1980s and 1990s led to increased attention among those providing the services to issues of early education which were being discussed and debated internationally; particularly issues relating to the type and quality of early education appropriate for young children. In 1998 the Department of Education and Science held a National Forum on Early Childhood Education. In a background paper to the Forum it was noted that:

'[T]he Secretariat of the National Forum regards early childhood education as based on a number of child development and educational considerations whose aim is to provide opportunities for the development of the child's personality. .... Though child development is wider than education alone, early development programming is seen by the Department of Education as a major supportive strategy in its effort towards educational reform. The improved quality of children coming into the primary education system and the prior attainment of high levels of social and cognitive skills can be a guarantee of real progress in the crucial early years of primary school when numeracy and literacy are acquired. Investment in early development and education is also seen by the Department of Education as a response to the growing marginalisation of certain categories of children within the Irish economy and hence to their capacity to benefit from education." (Coolahan, 1998, pp. 157-159).

The above illustrates a focus on early childhood education which emphasises its role as a preparation for primary school, a preparation which can have differentially positive effects on those children at risk of later school failure. The Forum Report did not make specific recommendations but laid the foundation for *Ready to Learn: the White Paper on Early Childhood Education* (1999a). The focus of the White Paper was the broad early educational needs of young children from birth to six years of age. A central concern noted was how best to promote early childhood education in situations of severe socio-economic disadvantage and how best to support young children with special needs. Needs are considered across a wide spectrum of settings including the development needs of very young children in the home; the supports necessary for parents concerning how best to help their children learn; the wide range of supports necessary for private providers and voluntary/community groups and the need to develop a strategy to enhance the quality of infant education in primary school. The White Paper recognises that the task set is not a simple one and notes that:

'A number of factors combine to make the development of appropriate structures in the early childhood education area a difficult task. These include the comparative lack of development in the early childhood education area, the wide range of proposals in the White Paper and the need to deal with co-ordination problems and other weaknesses of the existing system (p. 129).

Ireland is at a point of potential change in early education. A number of different structures and actions have been set up since the publication of the *White Paper on Early Childhood Education* (1999a) and the *National Childcare Strategy* (1999c). These include two particularly important structural developments, the nationally distributed, local County Childcare Committees (CCCs) and the Dublin-based Centre for Early Childhood Development and Education (CECDE). These structures, within their terms of reference, have the potential to improve co-ordination across departments and the sector and change the way in which early childhood education is conceptualised and perceived in Ireland. In addition, the National Council for Curriculum and Awards has developed a framework for early learning for children from birth to six years which could also act as a force for positive change (NCCA, 2004). Two reports addressing the education and training needs of those working in early education have also been published and afford a valuable basis for considering the educational needs of teachers of young children (Ireland, 2001; Ireland, 2002a). Finally, it is expected that the forthcoming OECD review of early education in Ireland will highlight developments, identify challenges and offer solutions to meet the challenges posed.

1.2 The International Context:

Internationally there have been a number of recent developments which have the potential to impact on early education in Ireland. On of the most profound developments was the publication of the UN Convention on Children's Rights (1989). The Convention addresses the civil, social, economic and cultural rights of children and their rights to protection. It recognises the importance of promoting as well as protecting children's rights and is a mechanism for the protection of children's rights rather than simply the protection of children. This has the important result of providing children with the right to have an active role as participants in decisions that affect them directly (Lansdown, 1996).

A rights-based approach to children, including young children, respects them as a specific social group; recognises the complex and diverse nature of children and includes all children as the primary consideration, targeting only as necessary. It identifies the best interests of the child as paramount in all matters relating to children and facilitates the participation of children, according to their age and maturity, in matters affecting them within their families and society. The Convention offers a powerful blueprint for reform in services for children, including early childhood education.

Following the publication of the *UN Convention on the Rights of the Child* the European Union published a ten-year action plan for early education across Europe, *Quality Targets in Services for Young Children* (European Commission Network on Childcare, 1996). This document argues that quality early education requires a strong national policy framework within which to work and identifies forty specific targets to be achieved by each European country by 2006. It presents a number of challenges to Ireland because, although there has been a growth in policy attention to and resources for early education, there is still no national policy for early education. More recently the OECD has published its review of early education in twelve countries, *Starting Strong: Early childhood education and care* (OECD, 2000). This document confirms the importance of early education to children, their families and societies and offers a variety of policy and practice examples to illustrate how quality early education can be achieved and sustained.

The most important international context within which this thesis is located is the rich research base that has grown up over the last thirty years within the early education sector itself, not least the IEA Preprimary Project (Olmsted & Weikart, 1989, 1994; Olmsted & Montie, 2001; Weikart, 1999) of which this thesis is a part. Research studies report that the positive impact of early education is found across all social groups but is strongest in children from disadvantaged backgrounds and that the most important learning in preschool concerns aspiration, task commitment, social skills, responsibility and feelings of efficacy in the child (Rutter, 1983, 1985; Sylva, 1994a, 1994b). The OECD report that the US has identified five early childhood dimensions in particular that contribute to the child's positive development and later success in school, namely: '*health and physical development; emotional well-being and social competence; positive approaches to learning; communication skills; and cognitive and general knowledge*' (OECD, 2002, p. 14.)

With the rapid pace of change in early childhood research and evaluation must be up-to-date. In particular the OECD recommends the undertaking of research on practices and process at local level by local centres and staff, which can be invaluable both in enabling staff to reflect on their own practice and in providing information to policy makers (OECD, 2002). There is limited detailed information on the early educational experiences of children in Ireland (Walsh, 2003) and much of what does exist has focused on intervention programmes for children considered at risk of future school failure (Hayes, 1995; Kellaghan, Weir, O'hUallacháin & Morgan, 1995; Ryan, O'hUallacháin & Hogan, 1998). There is virtually no data with respect to the experiences of middle-class Irish children. The Irish element of the IEA preprimary project, along with this thesis, provides data on both lower and middle-income children and their families (Hayes, O'Flaherty & Kernan, 1997).

1.3 Theoretical Context:

Historically international research in early childhood education has examined the effectiveness of early intervention programmes (Lazar & Darlington, 1982; Schweinhart & Weikart, 1997). This trend is also evident in the limited published research in Ireland (Coolahan, 1998; Hayes et al., 1997; Kellaghan, 1977; Ryan, O'hUallacháin & Hogan, 1998). A review of more recent international research identifies a broadening of research topics to include themes of quality and best practice; relationships; cultural diversity and the context of early education (Bowman, Donovan & Byrnes, 2001; Marcon, 1999, 2000; Moss & Pence, 1994; Sylva, 1994a; Woodhead, 1998). Current research seeks to address more complex questions: what are the essential elements required of early educational environments to promote optimum child development? How can these elements be created and enhanced? How can these elements be measured or assessed? If we know the answers to these and related questions, government policy officials, educational planners, teachers, and parents will be in a better position to provide early education that will enrich young children's lives and facilitate them in reaching their potential, now and in the future.

A dominant influence on practice in early education has been the concept of developmentally appropriate practice (DAP) (Bredekamp, 1987; Bredekamp & Copple, 1997). This concept owes much to the work of Jean Piaget and the developmental paradigm, and has generated heated debate among early education researchers. While welcomed by practitioners as a guide it has been criticised as a 'western' model, lacking cultural sensitivity (Dahlberg, Moss & Pence, 1999; Woodhead, 1996, 1998). The

developmental paradigm dominates in early education in Ireland as can be seen in a review of the Primary School Curriculum (1999b) and the title of the White Paper on Early Education: *Ready to Learn* (Ireland, 1999a).

An emerging body of research challenges the developmental approach to early education and poses challenging pedagogical and methodological questions for practitioners and researchers (Burman, 1994; Pellegrini, 1996; Meade, 1999). Critically reviewing the dominant developmental perspective presents challenges to teachers trained within the developmental paradigm. Burman (1994) has argued that a teacher trained thus '*encounters an untenable conflict between the mandate for non-interference to promote independence, and her institutional position as responsible for children's learning.*' (p. 164-165). Irish research has found that primary teachers working with junior infant classes recognise a conflict between their expectations of four-year-olds and their practice (Kernan and Hayes, 1999). Teachers identified structural issues, like class size, as the main factors contributing to this conflict rather than referencing any internal tension within the developmental paradigm itself (Hayes, O'Flaherty & Kernan, 1997; INTO, 1995).

From a research perspective the developmental paradigm has tended to study children in clinical and experimental settings. Recent research in psychology, sociology and education has seen a move away from the traditional approach to studying children in isolation from the complex contexts in which they develop. Increasingly, attention is being given to understanding childhood and children in a wider socio-cultural context where children themselves are seen as active participants (Bronfenbrenner, 1979, 1995; Bruner, 1996; Johnson, 1988; Pellegrini, 1996; Quortrup, 1994; Valsiner, 1997a). In education influential theorists of the twentieth century, such as Piaget, have left us with an image of the individual child making sense of the world and travelling towards adulthood alone. The prevailing ideology of the individual child, with a common, definable pattern of development, has created a perception of all children as possessed of a universal biological and psychological makeup - the universal child. This approach ignores unique individuality, the complex inter-relatedness of life, the importance of social interactions and the socio-cultural context of development. It fails to take account of children as complex, active human beings with rights who deserve to be recognised as participating partners in the educational process.

Woodhead (1998) has noted that, in psychology in particular, the simplistic interpretation of universalist developmental theories, where all children are measured against some notional 'real' or universal child, is gradually being eclipsed by a more comprehensive 'cultural psychology'. Such developments emphasise the individuality of the child while highlighting the need to conceptualise development in the wider context of the individual's experiences and the contribution of the child to those experiences. Children are embedded in their environments and they affect and are affected by them. Researchers are urged to study children within the reality of their experiences as active members of a family and society. This study was designed to research the lives of young children through observing them in the early educational context of the junior infant classroom.

This thesis reviews the development of psychology and education and argues that it is useful to take a multi-theoretical perspective when applying the results of psychological research to teaching practice. It is proposed that the bio-ecological model of development (Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Morris, 1998) presents a valuable and meaningful framework within which to link psychological theory with educational practice from both a research and pedagogical point of view. It is a model with sufficient detail to allow for attention to all the complex systems of the early educational experience whilst, at the same time, facilitating recognition of the reality, dynamism and complexity of everyday life.

In reviewing the literature on these topics the work of John Dewey (1859 – 1952) emerged as a recurring reference point. His extensive writings on education (Archambault, 1964; Dewey, 1897, 1900, 1900/1956; 1902/1956; 1916/1944; 1938/1998) highlight the power of psychology to inform practice in education and present a view that education is the co-ordination of the psychological and the social. His work directly influenced the work of Jean Piaget whose theory of cognitive development has itself influenced the developmental approach to early educational pedagogy (DeVries & Kohlberg, 1987). Some authors favour a constructivist approach to early education, which locates the child as an active partner in the learning process. Authors advocating this approach have also located it within a Piagetian framework (DeVries & Kohlberg, 1987; Hohmann & Weikart, 1995). This study, on the other hand, argues that the constructivist approach to practice is better located within a Deweyan framework, which allows for a synthesis of the psychological and social factors impacting on children's learning and facilitates a more interactive pedagogy.

Dewey's extensive writings on education and his beliefs about education reflect many of the issues pertinent to contemporary researchers and practitioners, including his views on the social nature of learning, the active involvement of the child in learning, the importance of good habits of mind and the emphasis of curricular relevance to the experiences of the child (Dewey, 1938/1998). His daughter, J.M. Dewey (cited in Tanner, 1997) noted that his recognition of the importance of 'inherent tendencies' led him to attach particular importance to the early years. It was also his concern over the inappropriateness of existing schooling that led to the development of his Laboratory School which set about applying psychological principles of learning to educational practice. The principles guiding the practice in this school, where intellectual development, social development and curriculum integration were approached seamlessly and inseparably (Tanner, 1997), are strikingly contemporary in tone.

1.4 The study:

The thesis title is *'What are four-year-olds doing at school? Reconciling current knowledge about learning in young children with early educational pedagogy.'* The study addresses the question at two levels. On the one hand, the study describes what four-year-olds are actually doing at school. It reports on teacher and parent expectations for four-year-olds and on the observational data gathered on 203 Irish four-year-olds, their families and their teachers in primary schools. Using data from the IEA Pre-primary Project[1]details of observed behaviour of the children and their teachers are presented. Some of this data has been reported elsewhere (Hayes et al., 1997). Additional analysis has been carried out for this thesis to provide more detail on social interactions in the classrooms. Matrices produced allow examination of the degree of correspondence between teacher planning, adult behaviour and child behaviour and the relationship between setting variables.

In addition to the direct question of what Irish four-year-olds do at school the study also considers the question of whether four-year-olds should be in primary school. The empirical findings are discussed in terms of what they suggest about the principles and values underpinning primary school provision for four-year-olds in Ireland. They are also considered in the context of an extensive literature review. In their report *'Eager to Learn'* (Bowman et al., 2001) the National Research Council in the US argue that early learning *'... is not a matter of simply assimilating a store of facts and skills. Children construct*

[1] The IEA Preprimary Project is a longitudinal cross-national study of early childhood care and education. The applicant is the National Research Co-ordinator for this project in Ireland (1994-present)

knowledge actively, integrating new concepts and ideas into existing understandings. Educators have an opportunity and an obligation to facilitate this propensity to learn and to develop a receptivity to learning....' (p. 2). In this connection the study reviews what constitutes quality practice and provision for four-year-olds in early education, considers why quality early educational provision is so effective and important and reviews the principles and values underpinning a selection of early educational practices. It presents empirical data on teacher and parent expectations and classroom observations and analyses the implications for the Irish system of early education, curriculum development, teaching practice and teacher education.

1.5 The layout of the thesis:

The thesis comprises seven chapters. The first is this introductory chapter, which is followed by three literature review chapters. Chapter Two reviews the separate but related developments in psychology and education since they emerged as two separate but sister disciplines in the early twentieth century. Chapter Three reviews a variety of studies and research findings from both early educational and developmental research. Drawing on both sources it attempts to answer the question of why good quality early education is important and effective for young children. Chapter Four takes a more detailed look at what quality early education looks like in practice, drawing on studies of curriculum and practice from a sample of countries and relating these findings to the current policy position in Ireland.

Chapter Five is the methodology chapter which presents the rationale for the design of the study and details the sampling procedures, the instruments used and the analysis undertaken. This chapter also discusses the limitations of the study and identifies the ethical issues addressed. Chapter Six presents the results of the study. The chapter begins with the descriptive data relating to the settings, teachers and children and including the results from the parent and teacher expectation questionnaire. The observational data is presented under the headings of Management of Time (MOT), Child Activity (CA) and Adult Behaviour (AB). The final section of the chapter presents details of the interactions between the teachers' management of time and observed child activities and between the management of time and adult behaviour. It also considers the interactions between a sample of setting context and process variables. The thesis concludes with Chapter Seven where the results are considered in more detail and in the context of the literature review.

It concludes with some suggestions on how to progress reform of early education in Ireland and presents recommendations for future research, practice and policy.

CHAPTER 2

CHILD DEVELOPMENT AND EDUCATION

Introduction:

This chapter presents a review of the development of psychology and education as separate disciplines and draws attention to the way in which different theoretical understandings of development and learning have impacted on educational practice, particularly in relation to early education. In addition it considers trends in research and practice which reflect how contemporary research in developmental psychology has moved from considering learning as simply a behavioural change, susceptible to external control, towards a more complex view of the dynamic, interactional and contextual nature of learning which sheds light on why certain practices are more successful with young children than others. Of importance to educational research and practice is our knowledge and understanding of the growth and development of children and how this fits together with educational practice (Bowman, et al., 2001). To teach children effectively it is important to understand how they develop and learn. Different theories about the relationships between instruction, communication, learning and thinking can lead to different views on the nature and importance of teaching in development (Wood, 1988; Sylva, 1994a, 1994b). However, the links between psychology and education are neither clear nor linear; they are not due to any explicit design or straightforward relationship between theory and practice. Nonetheless, beliefs about how children learn [psychological theories], influence and are reflected in the understanding of what it means to teach [educational practice].

2.1 Psychology and Education:

The distinct disciplines of psychology and education have been characterised as 'sister disciplines' (Johnson, 1988). Educational practice and research has informed and been informed by studies of child development. As psychology and education have emerged to become two separate disciplines of study the one has continued to gain from the other. However, there are differences in emphasis on what is studied by researchers in psychology and education. In psychology the attention has tended to be on patterns of development and studies of how and why children learn. Educational research, on the other hand, has tended to be more practice focused and more attentive to what children should learn and how best to teach that.

Within the discipline of psychology there are a variety of discrete fields of study such as social psychology, neuro-psychology, organisational psychology. Of particular relevance to education is the field of developmental psychology, which focuses on studying and understanding the pattern of human development and the factors which contribute to and inhibit development. So wide and diverse are the studies in developmental psychology that some authors believe it has become a discipline worthy of recognition as a developmental science in itself rather than a field of psychology (Valsiner, 1997a; Cairns, Elder & Costello 1996; Shanahan, Valsiner & Gottlieb, 1997). Cognitive psychology is often considered under the broader umbrella of developmental psychology and is specifically concerned with the development of cognitive structures, elements and processes. It became dominant during the mid twentieth-century and has been particularly influential on both research and practice in early education. Educational psychology is another important field of psychology and has been identified by Hilgard (1996) as the bridge between the science of psychology and the art of teaching. In many ways these different fields overlap and interact and terms are used interchangeably. In psychological research for instance, some researchers may study the neurological basis for different behaviours, while others are more interested in the control of external factors to manage behaviour and still others seek to understand the contextual and process factors that contribute to behaviour. Depending on the perspective of the researcher, different aspects of a topic will be highlighted, each contributing to a richer understanding.

One cannot assume that by simply reading the results of research on learning and teaching, educational practice will necessarily adjust to the new understandings. Research findings must be made meaningful and useful to the teaching situation and supports must be put in place to facilitate the transfer of research-based knowledge into practice to the benefit of both pupil and teacher. In a review of the degree to which psychology impacts on early education Vejleskov (1999) analysed articles in the European Early Childhood Education Research Journal over a period of time. He observed that the psychological references related predominantly to cognitive development and that writers in the field of educational psychology in general did not tend to draw on the wider fields within psychology. From this review and other research he carried out, he confirmed Johnson's view that it is inaccurate to assume that data gathered in scientific research psychology impacts directly on teaching practice. Rather he found that it is filtered through teacher's reading of popular psychology, which tends to be conservative, and 'common-sense' or 'folk

psychology', which is a very powerful influence (Bruner, 1996). Furthermore, when considering the impact of psychology on education Olson and Torrance (1996) warn that, under certain circumstances, the sciences designed to provide information which may assist children in their development have been used as a means of classifying children into categories that are used to justify and legitimise poor performance rather than improve it.

2.1.1 Early theories of educational practice:

The history of educational psychology is so closely bound up with both education and psychology that it is difficult to describe it as beginning with a specific event (Hilgard, 1996). Educational theories have been evolving over the past 200 years, and psychology distanced itself from its earlier ties to philosophy to become established as a distinct discipline in the late 19th century. Hilgard identified what he called the 'Continental Background in Anticipation of Educational Psychology' and selected four key figures for further comment: Jean-Jacques Rousseau (1712 – 1778), Johann Heinrich Pestalozzi (1746-1827), Johann Friedrich Herbart (1776-1841) and Friedrich Froebel (1782-1852). It is noteworthy that these same figures feature prominently in the history and literature of early education.

Rousseau's influence, particularly through the continued popularity of his book *Emile*, is evident in educational debate at a theoretical and philosophical level, but his views did not impact to the same degree on practices in education, and early education in particular, as the other three figures. Rousseau's views on the nature of development and his identification of different stages of development requiring distinctive approaches from teachers anticipated much of the work of developmental psychology. In addition his belief in allowing children to discover things for themselves has a contemporary ring.

Pestalozzi had an innovative conception of education and established a school to put his philosophy of education into practice and train others in his methods. Many of his comments on education also sound very modern. He was critical of the formality of instruction where lessons were recited in unison with too much reliance on memory. He stressed the value of activity, viewed education as growth rather than the acquisition of knowledge and advocated a school atmosphere of love, friendliness and understanding rather than of fear. Despite the predictive nature of their work in respect of the future direction of both psychology and education Hilgard (1996) argues that there was little of formulated psychology in the works of either Rousseau or Pestalozzi.

Herbart was the first of the significant education innovators to provide a psychological basis for his theories. He offered the concept of apperception as a psychological construct underpinning his theory of educational practice. His theory emphasised the role of experience and memory and highlighted the importance of what the learner brings to the learning situation. He was anxious to see improvement in educational effectiveness and linked his theory of education to a five-step approach to practice: preparation, presentation, association and comparison, generalisation or abstraction, practical application. By doing this he provided a tangible vehicle for teachers to apply his principles in practice and thus continue to attend to his theory of education in their day-to- day work. The features of his pedagogical planning were very influential and resonances of them can still be found in teacher education and practice today.

The fourth European influence on the development of educational psychology mentioned by Hilgard was Froebel. He came to prominence in the US and elsewhere as the founder of the kindergarten movement, although most of his work extended across the wider span of education. In his writings he emphasised the importance of education in the early years as a basis for cooperative living and considered activity as the root of all education. Froebel saw a key role for mothers in the early education of children and was a pioneer in the development of teacher training for women whom he regarded as the most appropriate teachers for younger children. Like Herbart, Froebel developed a theory of practice associated with his wider theory of education and devised materials – known as gifts – to nurture the development of children at different stages in their education. Later in his work he was to under-emphasise the role of these materials due to his concern that they were being thoughtlessly applied by poorly trained teachers (Liebschner, 2001).

Both Froebel and Pestalozzi had a direct influence on developments in early and elementary education in Ireland. Pestaolzzi's educational experiment attracted international attention and his school welcomed a wide variety of visitors, among them John Synge, relative of the author John Millington Synge. He visited Pestalozzi in 1815 and was greatly influenced by the ideas underlying the education provided at his school. On arrival back in Ireland he established a school on similar lines on the grounds of his estate in County Wicklow. The school experiment was short lived and did not exert a wide influence. Another Irish educationalist influenced by the views of Pestalozzi was Maria

Edgeworth (1767 – 1849) who stressed in her writings the importance of the home environment and the active involvement of children in their own learning (Hayes, 1999).

Froebel's influence on the international scene owed a great deal to his followers who popularised his theory on both sides of the Atlantic. In 1862, ten years after his death, the first Froebel kindergarten was opened in Dublin by Miss Herbert and by 1888 there was a training course leading to a Kindergarten Certificate provided at the Marlborough Street Model School. In 1918 Froebel training commenced at Alexandra College in Dublin where a variety of courses, ranging from a one year certificate course for junior schoolteachers and governesses to the three year Froebel teacher training course that is now the standard, were offered (Hayes, 1999).

These influential 18th and 19th century figures proposed models of educational practice which had longstanding effects. Their theories also contained elements of philosophy and psychology. A clearer distinction between these three fields of study began to emerge at the turn of the 20th century. While such a distinction is valuable for clarity there is, in much educational writing, a blurring across disciplines and evidence of common, often permeable borders (Philips, 1996).

2.1.2 *The emergence of the disciplines of psychology and education*:

The twentieth century saw a shift in influence from Europe to the United States. G. Stanley Hall (1844-1924), William James (1842- 1910), John Dewey (1859-1952) and Edward L. Thorndike (1874-1949) have been identified as key figures in the development of the distinct disciplines of psychology and education at the turn of the 20th century (Hilgard, 1996; Johnson, 1988). Hall is regarded as a founder of developmental psychology who, through the Child Study movement, connected developmental theory to empirical research on the one hand and to educational practice on the other. The link between child study and education was strengthened by James when he developed courses in child study as early as 1863. One of the most prolific and influential researchers within the child study movement was Arnold Gesell (1880-1961). He designed a complex laboratory system for his observational research. The detailed descriptions of the developmental milestones he published continue to inform child development work. The term 'educational psychology' gradually entered the vocabulary but did not fully supplant 'child study' until the early twentieth century. Hall and James were founders of the American Psychology Association.

Both Dewey and Thorndike became lecturers at Teachers' College, Columbia University under the influence of James. Despite this common ground they were very different. While Dewey was a philosopher and a reformer, Thorndike was a psychologist and a conservative. Thorndike was influential because of his commitment to developing psychology as an experimental science and applying his findings to teaching practices. Dewey is regarded as a central figure in education because of his prolific writing on the philosophy of education, his support for the teaching profession and his efforts to link the participatory and social nature of learning to pedagogical practice. Dewey's influential books included *The School and Society (1900/1956), The child and the curriculum* (1902/1956), *Democracy and Education* (1916/1944) and *Experience and Educatio*n (1938/1998). His writings, while reporting and fostering educational reforms, also challenged readers to consider the importance of the classroom to children's learning and to recognise the active role of the child as learner.

Like Herbart, Dewey emphasised the importance of experience and interest in education. He was critical of the Child Study movement which, he argued, overestimated the maturational and biological basis for learning and development (1902/1956). He saw learning as the remaking of the old through union with the new and characterised the process of learning as active, social, dynamic and transformative. Dewey valued the logic of science, or the scientific method, and considered it a role of education to encourage children to form and test hypotheses. However, he did not propose a uniform approach to education and, while recognising the inherent uncertainty of the participatory, social process in education, he kept it as a central consideration in his writings. He regarded education as preparing for life in a democracy as much as learning skills and knowledge and believed schools should reflect democracy and provide an environment or community in which children could experience democracy in action. Dewey placed the active, social child as central in the educational environment. He encouraged a degree of freedom in the classroom unusual for his time, believing that children's interest sustained their efforts to solve problems as they experimented with solutions. He also, however, believed that there must be some formal instruction in education and some content to be transmitted, but this content must be considered open to transformation in the social, interactive and bidirectional process of learning. James was critical of Dewey's support for allowing children to learn through the active exploration and examination of materials, characterising such an approach as 'soft pedagogy' (Watson, 1996). Critics of what came to be called progressivism argued that too much freedom for children would lead to chaos

in classrooms. Over time, aspects of Dewey's vision became fragmented in the hands of teachers who did not fully understand the complexity implementing such an approach implied. This resulted in an unwarranted rejection of his theory in mainstream debates about education and educational practice (Ryan, 1995).

In many ways Dewey's views of child development and learning resonate with contemporary views and were ahead of their time. In an astute observation Hilgard (1996) notes that '*Dewey's emphasis on interest and effort as affecting the child's motivation and capability to solve his or her own problems represented a dynamic innovation for which psychologists were not yet ready*' (p.995). It is only in the recent past that psychology has provided a theoretical context within which his philosophy of education can be interpreted.

2.2 Psychology and its Impact on Educational Practice:

Thorndike was more influential than Dewey in his impact on the direction of educational psychology and educational practice. He was a committed experimenter and measurer who valued the power of carefully collected data. His interest was in applying psychological principles to teaching to improve the educational outputs of schools. He saw the need for improvement in schools but was interested in quality control rather than innovation. His empirical contribution to education is what gave him such a high profile, in particular his attention to the improvement of classroom instruction and the measurement of learner achievement. It was this empiricism, this commitment to measurement that fitted in so well with the way in which psychology in general was travelling. The scientific movement, epitomised in Thorndike's work, generated an air of optimism that through this type of experimental research the aims of education could be achieved by way of efficient and uniform methods based on objective and measurable data.

While Thorndike's work influenced the practices in the traditional schools, which were always more numerous than the innovative ones, there were some creative innovations which gave rise to a number of valuable studies into how findings from psychological research can inform practice and vice versa. The early 20th century saw a vibrant interest, internationally, in child development and its application to teaching. Many innovators established schools to study different approaches to early education including Dewey at the University of Chicago, Susan Isaacs at Oxford, the McMillan sisters in London, A.S. Neil at Summerhill and Maria Montessori in Rome. These experimental or laboratory schools

provided the basis for many books and articles on education in general and early education in particular.

2.2.1 The Rise of Learning Theory:

The striving for scientific credibility using methods and procedures established by the physical sciences kept learning theory to the fore as a force in psychological research well into the 1970s. Wood (1988) has identified Pavlov's work on conditioning as a key study in extending the experimental basis for researching learning. Particularly influential was his demonstration, in 1927, that you could 'teach' a dog to salivate to the sound of a bell by careful temporal linking of the sound of the bell to the sight of meat. This allowed him to take a reflex – salivation at the sight of meat – and elicit that response from a novel stimulus. Psychologists began to seek general laws from this finding which would lead to a scientific theory of learning. Spelt (1948) applied this principle in his study of learning in the womb. Using the kicking reflex of the unborn in response to loud noise he created a situation where the unborn would kick in response to gentle vibration. Having elicited a change in the behaviour of the unborn he argued that learning had occurred (Hayes, 1999).

Pavlov's experiment gave rise to a variety of different studies of learning, where learning was defined as an observable change in behaviour. Using different species and creating different experimental conditions researchers sought to find underlying laws of behaviour and determine which environmental conditions yield particular learning outcomes. One of the most influential learning theorists was Skinner, who studied the relationship between a stimulus in the environment (S) and a response in the animal (R), proposing what became known as the S-R theory of learning. He established from his research with various animals, including humans, that the best conditions for learning to occur were those where reinforcement (or reward) was given intermittently rather than at every response. When applied to teaching these findings allowed Skinner (1968) to assert that formal education was failing to teach children because it usually applied inappropriate schedules of reinforcement and was based on 'aversive control'. He favoured a positive approach to teaching and argued that teachers failed to shape their pupils' learning because lessons and assessments were designed to identify what children do not know and cannot do rather than to emphasise what they do know and are able to learn. His work led him, and others, to emphasise the role of the teacher in managing observable behaviour as the key factor in successful education and classroom management and to ignore the less measurable internal process that might impact on learning. He attacked the use of pre-scientific terms such as

'attitudes', 'initiatives' and 'alienation' to explain human development by, he complained, '*almost everyone who is concerned with human affairs*' (1972, p. 9).

Learning theory, or behaviourism, and Skinner's research in particular, has informed the work of many researchers and teachers in their efforts to develop carefully controlled classroom management techniques to allow for effective teaching. Renninger (1998) suggests that it continues to inform educational practice due to its relative simplicity, its scientific presentation and the fact that in particular situations it is useful in the classroom. The problem is that learning theory does not provide sufficient information with which to begin to consider and respond to the complexity of the processes involved in students' emerging understanding of concepts, skills and self-knowledge. The behaviourist approach to learning has been criticised for considering humans as mere respondents under the control of the laws of nature, which are accessible to discovery through carefully designed research. In education behaviourists characterise the child as passive, developing as a function of the environment, and the teacher as the primary source of knowledge, the resource manager and the agent for socialising the young child (Johnson, 1988; Philips, 1996).

Despite its many critics learning theory has had some positive effects on education. Such positive influences can be seen in the emphasis on careful planning for certain learners, such as those with special needs (White & Cameron, 1987) and the use of praise as a reward for learning rather than criticism for perceived failure (Guralnick, 1997; Wheldall & Merritt, 1989). The ubiquitous use of stars, star charts and bonuses as rewards for appropriate behaviour in classrooms is further evidence of the powerful legacy of learning theorists in early education.

Katz and Chard (1994) caution that there is a degree of thoughtless application of ill-understood concepts from the learning theory approach in early educational practice. In particular they draw attention to the growing body of research on the effects of rewards and bonuses suggesting that the tendency of teachers to, for instance, tell children they may do art work when they have successfully completed a reading assignment is more likely to depress the value and liking children have for reading to than enhance their reading skills. Mueller and Dweck (1989) found from their research that praise for intelligence may undermine children's motivation and performance as they sense they either are or are not intelligent and cease to value the contribution that effort can make to

the learning process. Praise for effort does not generate such a 'helpless' response in children when confronted with initial or perceived failure.

2.2.2 Challenges to learning theory:

Despite the powerful impact and scientific patina of the behaviourist approach there were challenges to its views even from researchers within the field, particularly regarding the degree to which such an approach addressed the complexity of human development. In his work on animal behaviour, for instance, Pribram, in the 1960s, reported observations which helped to convince him that external reinforcement was neither a necessary nor sufficient condition for learning. He found that under certain circumstances animals would continue to behave in a manner ostensibly controlled by reinforcement even when there was no reinforcement or where the animal was satiated and there was no value to the reinforcement. The implication of his work is that the activity itself held some intrinsic interest for the animal.

Albert Bandura (1977) challenged the simple S-R model of learning. He developed the social learning theory which modified the S-R model to capture the more complex learning of the human, to take account of the cognitive processes involved in learning and to recognise the role of the social in learning. Through his studies he identified the powerful nature of observational learning and the role of modelling in the learning process. Bandura later re-titled his theory the social cognitive theory (1986) to reflect the growing understanding of social influences on cognitive development. While emphasising social influences on learning Bandura continued the behaviourist tradition of viewing the child as somewhat passive in the learning process, in this approach the child is seen to learn the behaviours and roles observed through internalisation rather than through active participation and transformation.

A third challenge to behaviourism came from information-processing theories. This area of study arose from the developments in computing and information processing (Cullen, 2001; Hilgard, 1996, Wood, 1988). Research focused on the acquisition and use of different cognitive processes. This approach to learning has given rise to the very active research area of artificial intelligence using computer-based simulations of the human mind to shed light on learning processes. From this field of study new terms such as 'plans' and 'strategies' emerged to describe the cognitive activity guiding human behaviour.

However, the information-processing metaphor for the mind is limited. Bruner (1996) characterised the approach as one where unambiguous information about the world is inscribed, sorted, stored, collated, retrieved and generally managed by a computational device. As far as human information-processing goes, however, Bruner points out that the process of knowing is often 'messier' and more fraught with ambiguity than this view allows. He argues that education is not just concerned with well-managed information processing. Neither is it simply a matter of applying learning theories to the classroom nor using the results of subject-centred achievement testing. Education is, he contends, a more complex pursuit (p. 43).

2.2.3 The rise of a cognitive view of learning:

Perhaps the biggest challenge to learning theory came from the rise in interest in cognitive development. The dominant figure in this influential field was Jean Piaget. Piaget had been writing on cognitive development since the 1940s. Although he was known internationally among academics within education from his earliest writings his works were not translated into English until the 1960s, delaying his wider impact in the English-speaking world. Since the 1960s, however, thinking about the nature of children's thinking and learning has been dominated by his ideas. As psychologists studying learning began to question the adequacy of the learning theorists' approach to understanding learning and to entertain (or, more accurately, re-entertain (Wood, 1988)) ideas about intrinsic motivation and the importance of activity and mastery for its own sake, Piaget's theory provided a well-developed framework for the study of learning and development. His writings and the response to those writings confirmed him as a significant leader in directing research and practice both in education and in developmental psychology.

Piaget came to the study of cognitive development from a background in the biological sciences where he commenced his scientific studies by researching the adaptation of species to different environments. His research methods and interests were rooted in biology and his aim was to develop an integrated theory of biology and philosophy of mind, which he termed genetic epistemology. He also sought common principles that would establish a theoretical continuity between biological and mental evolution and would help us understand the origins and development of logical, mathematical and scientific thought.

As a result of work he carried out while standardising psychological tests he became interested in the way in which children at different ages differed from each other in the way in which they answered the various levels of questions posed. In particular he was interested in the age differences and the illustrative nature of younger children's incorrect answers. His theory of cognitive development was premised on the belief that cognitive advances in the individual involved adaptation to a particular environment and he examined, through his research with children, how the individual develops in their ability to make sense of the world. His theory offers a detailed and specific account of universal stages in human development, which provided a possible explanation as to when and how a child is ready to learn or develop specific forms of knowledge and understanding (Piaget, 1971).

While evidence emerging from psychological theories and research forms the basis for developments in education provision and practice, societal policies and values are also influential. A key influence on developments in early education during the rise of interest in Piaget's theories was the political impact of the Russian launching of Sputnik in 1957. This event led to the total review of education policies in both the United States and Britain leading on to a corresponding rise in interest, in the US and UK in particular, in early educational interventions (Hayes, 1983; Hilgard, 1996; Kohlberg, 1968; Smith & Connolly, 1980). The funding released to develop and research early intervention projects provided a valuable context for linking psychological theory with educational practice.

Although Piaget wrote very little about the educational implications of his theory he has informed much educational policy and practice both nationally (Ireland, 1971, 1999a, 1999b) and internationally (Bredekamp & Copple, 1997; Ireland, 1998). His assertion that a child becomes ready to learn -'readiness' - formed the basis for a theory of learning 'readiness' which Wood (1988) considered a developmental 'en route' to educational practice. 'Readiness' has become a central aspect of curriculum planning and educational practice and its influence on educational thinking can be seen in many models of educational practice (Ireland, 1999a; OECD, 2002; Dockett & Perry, 2002; Bruner, 1996). The Piagetian legacy can be observed in contemporary Irish writings (McGough, 2002), in the title of the recently published *White Paper on Early Childhood Education: Ready to Learn* (1999a) and the layout of the *Primary School Curriculum* (1999b).

In his explication of the stages of cognitive development Piaget proposed four main stages in a continuous path towards the formal operational thought of adulthood. Early research by those impressed by Piaget was designed to verify his theory and the existence of these stages. Research questions arising from the Piagetian perspective focused on the age at which children can rehearse material to be remembered; the number of generic things children can remember at specific ages, the age at which children begin to perceive depth, understand concepts, classify along two dimensions, seriate, conserve volume. The second stage of cognitive development – the pre-operational stage – is particularly relevant to early education. Piaget considered children at this stage to be developing towards operational thinking and to be constrained in their learning by the limitations of their cognitive capabilities. His research and the language he used to describe the path of cognitive development in 2 – 5 year olds emphasised cognitive deficiencies rather than competencies, identifying what children could not do instead of what they could do. This tendency to view the young child as unable to classify; unable to conserve; unable to decentre is still evident in education today despite the fact that such a deficit view has been challenged (Hayes, 1995; Lambert and Clyde, 2000; Olson & Torrance, 1996; Shayer, 2002; Shayer & Adey, 2002).

Katz and Chard (1994) argue that considering cognitive development as staged development resonates well with measurable and observable Gesell-type developmental milestones but is only one, the normative, dimension of development. The dynamic dimension, where change, delayed impact and cumulative effect must be considered, is also important. This dynamic dimension requires attention to the experiences the developing child brings to a situation in the here and now. They write that *'[W]hen both the normative and dynamic dimensions of development are taken into account, it seems reasonable to suggest that just because children* can *do something when they are young does not mean that they* should *do it'* (p. 18/19).

In addition to his characterisation of cognitive development as a staged process he also proposed the existence of cognitive structures or mechanisms (schema) through which experiences are represented and organised. His characterisation of cognitive development as occurring in stages and his concept of the child actively constructing knowledge, constructivism, have been singled out as Piaget's greatest contribution to education and research (Rogoff, 1990). Piaget also stressed that the learner is actively involved in the construction and reconstruction of schema through the dual processes of assimilation and

accommodation resulting from interactions with the environment. This view of the child as an architect of learning challenged teachers to reconsider their role in education and move towards facilitating the formation of the mind rather than concentrating on furnishing it (deVries & Kohlberg, 1987). Some authors consider that this emphasis on the child as an active learner has downgraded the role of the teacher in the education process and have called for a review of the important role that teachers have in facilitating learning (Bruner, 1996; McGough, 2000, 2002; Wood, Bruner & Ross, 1976).

Piaget has mistakenly been interpreted as considering only the individual at the expense of the environment and the social and criticised as too focused on the cognitive processes of the individual and neglectful of the wider social context as reflected in research on social situatedness (Wertsch, 1991) and situated learning (Lave and Wenger, 1991). This view is not entirely justified: as a biologist, he recognised and respected the role of the environment and the individual's need to adapt to it. However, his primary interest was in how individuals adapted to their environments. He sought to present a structural theory of cognitive development to locate his work in a biological context. There is no doubt that his research focus was on individual development rather than the degree to which the social world contributes to that development. Influenced by Piaget much research in both psychology and education emphasised and focused on the individual learner and their construction of reality.

2.2.4 Challenges to the cognitive view of learning:

As his influence grew and research to assess the validity of his theory expanded Piaget's research methods came under scrutiny. Margaret Donaldson (1978) was particularly critical of his 'clinical interview' technique arguing that it was the language of the researchers and the task settings that led young children to 'fail' to, for instance, conserve or decentre. She and her colleagues took many of Piaget's key experiments and, by modifying the situation to take account of the child's perspective, were able to show that children were more competent and less egocentric than his work suggested (Donaldson, Grieve & Pratt, 1983). Researchers, building on the individual constructivist view of learning promoted by Piaget's theory, were moving away from the assumption that it was universal (Donaldson, 1978; Donaldson, Grieve and Pratt, 1983; Rogoff, 1990; Sutherland, 1992). Post-Piagetian research in education also raised debate about the value of the concept of 'readiness'. Bruner (1996), for instance, argued that the idea of 'readiness' was constraining and denied the individuality of learners and the role of experience. Other

authors de-emphasised the centrality of readiness in favour of other dimensions of learning and development such as learning and thinking 'dispositions' (Katz, 1985; Perkins, Jay and Tishman, 1993; Carr, 2001a, 2001b).

The earlier interpretation of Piaget's theory of cognitive development as generic, or a general capacity across all task, was also challenged through research evidence that it was more task specific and that there were skills and knowledge associated with different domains (Feldman, 1980; Rogoff, 1982). This led to a growth in research away from cognitive development *per se* towards the study of linguistic, mathematical, and writing development involving cognitive processes such as memory and attention. The increased awareness of the relevance of psychological research to teaching led more research psychologists to conduct their investigations directly in school settings, where learning and teaching go on, where classroom management and other contextual aspects of the school experience become part of the psychologists' background information (Hilgard, 1996).

2.3 Cognition in Context:

Jerome Bruner's interest in cognitive and language development extended to consideration of its application to education. As early as 1962 he wrote *The Process of Education* to link psychological theory with educational practice. While Piaget was interested primarily in the development of cognitive structures, Bruner was interested in the context and process of cognitive development. He considered the evolution of the human mind as '*linked to the development of a way of life where 'reality' is represented by a symbolism shared by members of a cultural community in which a technical-social way of life is both organised and construed in terms of that symbolism. This symbolic mode is not only shared by a community, but conserved, elaborated and passed on to succeeding generations who, by virtue of this transmission, continue to maintain the culture's identity and way of life*' (1996, p.2/3)

Piaget and Bruner shared a common belief in the importance of relationship between action and problem-solving in learning. They were both critical of teaching that merely showed the child how to manipulate abstract procedures (for instance, learning how to solve equations) without first establishing the deep connections between such procedures and the activities involved in the solution of practical, concrete problems. However, Bruner had a more positive view of the potential and competence of the young learner than is evident in Piaget's writing. He believed that the processes that underlie intelligent and

adaptive thinking are not the result of exclusive interventions of the child working in isolation as an individual learner. Rather they are communicated, albeit in subtle ways, from the mature to the more immature within a cultural context. He argued that any subject could be taught effectively to any child at any stage of development as long as due attention was paid to facilitating the links between the content to be taught and the knowledge that the learner brought to the situation.

Bruner has always considered the relationship between the learner and the teacher as central to the learning process. In 1976 Wood, Bruner and Ross popularised the influential concept of scaffolding to describe the process of guided assistance on problem-solving tasks. Initially writings on this topic emphasised the role of the expert as the guiding master and underestimated the social and interactional nature of the process. More recently the importance of intersubjectivity, or joint-attention of novice and expert towards an object or a task yielding shared understanding, has been highlighted (Bruner, 1996). In practical terms such research has led to a rise in peer tutoring and reciprocal teaching by educational researchers and entered the vocabulary of classroom teachers as its potential for teaching purposes was recognised. While scaffolding has been criticised as a limited metaphor for learning support (Rasmussen, 2001; Sylva, 1987) the scaffolding principle has been drawn on by many educationalists in early education (Berk and Winsler, 1995, Lambert & Clyde, 2000).

Attention to the importance of shared understanding and the social construction of knowledge through such mechanisms as scaffolding owes much to the work of Russian writer Lev Vygotsky (1896-1934). Vygotsky, despite his short life, has become a very influential theorist in education in general and early education in particular. The assimilation of Vygotsky's work into Western psychology has been slow due in part to the fact that, despite being a prolific author, he did not produce a single body of work to which readers could refer. His works became available to the English speaking public with the publication of such texts as *Mind in Society* (1978) and *Thought and Language* (1934/1986). His work featured more prominently in educational discourse from the mid-1980s following the publication of Wertsch's book of readings '*Culture, Communication and Cognition: Vygotskian Perspectives*' (1985).

Vygotsky viewed the origins of thought as social and his main contribution to the practice of education has been to emphasise the importance of social and cultural contexts to the

development of the individual across time. His primary concern lay in understanding the nature, evolution and transmission of human culture. He places language and communication at the core of intellectual and personal development and held that an individual's ability to perform cognitive tasks when acting alone, independent learning stems from a prior socialisation process. His emphasis on the social and the role of society in development of education has been hugely influential (Lave, 1991; Palinscar & Brown, 1984; Resnick, Levine & Teasel, 1991; Rogoff, 1990; Scribner & Cole, 1981; Tharp & Gallimore, 1988; Tudge, 1992; Valsiner, 1988; Wertsch, 1985, 1991).

A key mechanism proposed for translating his theory into educational practice was the zone of proximal development (ZPD). This zone has been proposed by Vygotsky to characterise a hypothetical, dynamic region in which learning and development takes place. It is defined as the distance between what a child can do independently and what he or she can do with the help of a more competent other. The concept of ZPD has provided a model for practice which can be applied to both formal and informal educational settings. Early studies of ZPD and scaffolding have been criticised for overemphasising the instructional role of the teacher or 'expert' over the interpersonal role and characterising the child as passive rather than as participative (Rogoff, 1990; Valsiner, 1988). More recently, Valsiner, (1997b) has criticised the value of the concept of ZPD not because the idea is flawed but because the construct is ephemeral. He argues that *'it is impossible to detect …a form that is only present in the process of becoming'* (p. 29). Research on this topic of scaffolding has been extended through the work of Rogoff (1990) on guided participation, Dunn (1987) on the importance of dyads and, in early education, Lambert & Clyde (2000) on the possibilities of self-scaffolding.

Vygotsky's argument that all higher psychological functions are social prior to being individual reflects the Deweyan view that the social individual is a participant in learning who creates new knowledge from old through the transformative nature of individual interactions with the environment and the people and objects therein. The individual and the social are thus mutually constitutive – the appropriate unit of analysis is one that involves neither the individual nor the context alone but captures both. Vygotsky's work gave rise to a move away from cognitive construction, emphasising the role of the individual, to social constructivism, which allows for the idea of co-construction of knowledge and stresses the social nature of learning. More recent studies have sought to

integrate the Piagetian and Vygotskian traditions (Gillen, 2000; Hatano, 1993; Cullen, 2001).

2.3.1 Development and learning

The relationship between development and learning differs from one theoretical context to the next. Behaviourists, or learning theorists, have, for the purposes of their experimental research, characterised learning as a change in behaviour. Such a simplistic definition has blurred the distinction between learning and development while simultaneously underestimating the complexity and dynamism of the learning process. By contrast, the Piagetian perspective considers learning and development as separate entities. Learning occurs through the direct action of the learner and is dependent on the level of cognitive development. According to those in the Vygotskian tradition learning leads to development: the learner and the social environment interact and collaborate to produce development. Such theoretical distinctions impact on educational practice (Johnson, 1988; Kohlberg & Mayer, 1972; Marcon, 1999). Within the behaviourist tradition the teacher's role is to manage the learning environment so that the learner achieves the desired outcomes. Followers of Piaget, on the other hand, define the teacher's role as one of supporter of learning and a guide of children's learning and self-initiated activities on a path pre-ordained by the development stage of the particular child. The practitioner influenced by the Vygotskian perspective emphasises social interactions and shared understanding as the basis for learning. Increasingly authors are questioning the value of such a stark distinction between development and learning, regarding it as unhelpful to our understanding of children (See also section 3.4). There is a trend towards overlap of research on learning and research on development and Kuhn (1995) and Rogoff (1997) have both argued that to all intent and purposes the two concepts are interchangeable. '*Modern research has made it clear that learning processes share all the complexity, organisation, structure and internal dynamics once attributed exclusively to development. If the distinction has become blurred, it is not because development has been reduced to 'nothing but' learning, but rather because we now recognise learning to be more like development in many fundamental respects'* (Kuhn, 1995, p. 138). In light of this the terms learning and development are used interchangeably in this study.

Theories of development influence theories of practice but a theory of development is not a theory of practice (Fein & Schwartz, 1982). The goals of a theory of development differ from those of a theory of practice; the former seeks to describe the norms of human

development applied to the individual, whilst the latter seeks to adapt practice to individual needs. Given our current appreciation of the integrated and dynamic nature of learning and development and the potential value of a multi-theoretical approach, a developmental framework within which to consider psychological theories of learning and theories of educational practice would be useful. Such a framework would require a level of complexity to accommodate the variety of factors influencing learning whilst at the same time providing a framework within which the factors can be considered, reconciled and responded to in pedagogical practice, policy and planning. Bronfenbrenner's bio-ecological model (Bronfenbrenner & Ceci, 1994) presents such a framework. From the very beginning and through its various iterations this model has addressed both the structural/biological and the process/socio-cultural dimensions of development (Bronfenbrenner, 1979, 1989; Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Morris, 1998). An additional feature of the model is the emphasis on the bidirectional relationships of people and context.

As early as 1979 Bronfenbrenner noted that a theory of practice creates a demand for an ecological theory of development. His model recognises that individuals are embedded in and affected by different levels of context at both a macro- and micro-level. It is a model which, Bronfenberenner argues, presents a context for designing and evaluating research while at the same time offering a developmental framework for educational practice. The original 1979 model was an extension of Lewin's (1948/67) field theory of psychology where Lewin proposed that behaviour (B) was a function (F) of the person (P) and the environment (E) as follows: B=F(PE) and the totality of these interrelating factors he called the Lifespace (LSp) which yielded B+F(PE) = LSp. In his development of Lewin's work Bronfenbrenner proposed a model which included development over time and proposed a series of nested systems with dynamic relationships both within and between the systems.

2.3.2 The bio-ecological model of development:

In all the iterations of his model of development from the initial presentation of his ecological model in 1979 to its most recent configuration as the bio-ecological model in 1998 Bronfenbrenner has drawn attention to the need for researchers and practitioners to pay close attention to the complexity of interacting systems and the interactions between and within those systems. The systems identified are called the microsystem, the mesosystem, the exosystem and the macrosystem. These systems, or levels, are organised

from those closest, or proximal, to the child to those whose influence is indirect or distal (Greene & Moane, 2000). Studying development using this model allows researchers and practitioners to contextualise child development and to take account of the overlapping and interacting nature of each system. The model, characterised as a set of nested levels with the child at the centre, has been used in early education, most notably by the New Zealand Ministry of Education in the development and implementation of their early years curriculum (New Zealand, 1996).

The child's most familiar *Microsystem* is the family but it also includes other settings such as day-care and school. In this study the children and adults are observed in the microsystem of the junior infant classroom; the *Mesosystem*, that is the communication and interaction between the various elements of the microsystems of the individual, is considered by reference to the match between parent and teacher expectations and the degree to which the teacher expectations match observed practice. The third level in the system is the *Exosystem* and refers to factors external to the children and adults but impacting on them nonetheless such as educational policy. Finally, the *Macrosystem* represents the influence of such factors as societal values and the position of the child in general and the early years child in particular.

The authors assert that the most recent version of the model, called the bio-ecological model, *' ... represents a marked shift in the centre of gravity of the model, in which features of the earlier version are first called into question, but then recombined, along with new elements, into a more complex and more dynamic structure. ... the model presented, while still evolving, is now called the bio-ecological model'* (Bronfenbrenner & Morris, 1998, p. 993/994). In this model a critical distinction is made between the concept of "environment" and "process", with the latter occupying a central position and having a meaning that is quite specific. In fact, process is at the core of the revised model. The construct of process (P) encompasses particular forms of interaction between organism and environment, called *proximal processes*, that operate over time and are posited as the primary mechanisms producing human development. The power of these processes to influence development is presumed to vary as a function of characteristics of the person (P), of immediate and remote environmental contexts (C) and the time periods (T) in which the proximal processes take place. To capture the integrated nature of the various elements the model is characterised as the PPCT model.

Using the four elements of the PPCT model they further propose that the form, power, content, and direction of the proximal processes affecting development vary systematically as a joint function of the characteristics of the developing person, of the environment, both immediate and remote, in which the processes are taking place, of the nature of the developmental outcomes under consideration and the social continuities and changes occurring over time through the life course and the historical period during which the person has lived. Note that the characteristics of the person actually appear twice in the bio-ecological model: first as one of the four PPCT elements influencing the 'form, power, content and direction of the proximal processes,' and then again as 'developmental outcomes'; that is, qualities of the developing person that emerge at a later point in time as a result of the joint, interactive, mutually reinforcing effects of the four principal antecedent components of the model. In addition, within this model of dynamic development, both cognitive and socio-emotional characteristics can be seen as precursors and producers of development as well as developmental outcomes, their influence as producers of development deriving from their capacity to influence the emergence and operation of proximal processes. Such features link in well with the Deweyan notion of the participating, active social learner in partnership with the elements of the environment engaging in the co-construction of new knowledge.

Elaborating on the construct of process the authors argue that human development, especially in its early phases, takes place through processes of progressively more complex reciprocal interactions between an active and evolving bio-psychological human organism and the persons, objects and symbols in its immediate external environment. To be effective, the interactions must occur on a fairly regular basis over extended periods of time. Such enduring forms of interaction in the immediate environment are referred to as *proximal processes*. Examples of enduring patterns of proximal process are found in feeding or comforting a baby, playing with a young child, child-child activities, group or solitary play, reading, learning new skills, athletic activities, problem solving, caring for others in distress, making plans, performing complex tasks and acquiring new knowledge and know-how (Bronfenbrenner & Morris, 1998, p.996).

The proposed 'proximal processes', or engines of development, have certain distinctive properties and depend on the activity of the developing person. In addition to occurring on a fairly regular basis, over an extended period of time activities must not be interrupted. One reason given for this is that, to be developmentally effective activities must continue

long enough to become 'increasingly more complex', mere repetition does not work. Secondly, developmentally effective proximal processes are not unidirectional; there must be influence in both directions. In the case of interpersonal interactions, this means that initiatives do not come from one side only; there must a degree of reciprocity in the exchange. Finally, proximal processes are not limited to interactions with people, but also can involve interactions with objects and symbols. In the latter circumstances, for reciprocal interactions to occur, the objects and symbols in the immediate environment must be of interest, in the meaningful way argued by Dewey (1916/1944, p127): they must be of a kind that invites attention, exploration, manipulation, elaboration and imagination.

2.3.3 The bio-ecological model and early education:

On the importance of process to development Bronfenbrenner and Morris (1998) note that the bio-ecological model introduces a new domain into the microsystem that emphasises the distinctive contribution to development of the proximal processes. They also note the importance of experience to the development of generative, as opposed to, disruptive, dispositions pointing out that within the model *'.... concepts and criteria are introduced that differentiate between those features of the environment that foster versus interfere with the development of proximal processes. Particularly significant in the latter sphere is the growing hecticness, instability and chaos in the principal settings in which human competence and character are shaped – in the family, child-care arrangements, school, peer groups and neighbourhoods'* (p. 995).

The concept of proximal processes has important implications for early education, highlighting the power of interactions and important role of the adult. Through reflective observation of the child, adults can come to understand the characteristics of the child and the environment which will facilitate positive development and learning. The characteristics considered most likely to influence the direction of future development are called 'active behavioural dispositions' which can be developmentally generative or developmentally disruptive. Developmentally generative dispositions involve curiosity; tendency to initiate and engage in activity, alone or with others; responsiveness to initiatives by others; readiness to defer immediate gratification in pursuit of long-term goals. Developmentally disruptive dispositions include impulsiveness; explosiveness; distractibility; inability to defer gratification or – in a more extreme form – readiness to resort to aggression or violence; or at the opposite pole, apathy, inattentiveness,

unresponsiveness, lack of interest in one's surroundings, feelings of insecurity, shyness, or a general tendency to withdraw from activity (p. 1009).

Bronfenbrenner and Morris (1998) describe the manifestations of generative dispositions they consider appropriate to our western culture. One manifestation, or class, of generative disposition they note is 'selective responsiveness' in the child followed by a tendency to engage and persist in progressively more complex activities, for example to elaborate, restructure and create new features in an environment – not only physical and social but also symbolic. These have been termed 'structuring proclivities' and they identify a number of studies which reveal the progressive sequence of such environmentally oriented dispositions from birth through to about seven years of age (p.1010). Another class of developmentally generative disposition described reflects the increased capacity and active propensity of children, as they grow older, to conceptualise their experiences. This, they argue contributes to the development of 'directive belief systems' about oneself as an active agent both in relation to the self and to environment. In early educational terms this notion can be linked to the work being done on belief systems, mastery learning, learner identity (Ames, 1992; Dweck, 1999) and learning dispositions (Carr, 1998, 1999, 2001b).

While the process and person(s) are key elements of the context of development so also is the environmental context, the microsystem, including its activities, relationships and roles. This is the ecological environment originally conceived as the centre of '*a set of nested structures, each inside the other like a set of Russian dolls*' (Bronfenbrenner, 1979, p. 3) and more recently described as '*a pattern of activities, social roles, and interpersonal relations experienced by the developing person in a given face-to-face setting with particular physical, social and symbolic features that invite, permit or inhibit engagement in sustained, progressively more complex interaction with and activity in the immediate environment*' (Bronfenbrenner & Ceci, 1994, p.1013).

Different theories of development shed light on different aspects of development with varying suggestions and challenges for educational principles and practices. Although system models attempting to explain development, such as that proposed by Bronfenbrenner, have been criticised as owing too much to a preoccupation with individualism and ignoring the power of interactions and discourse between parents, teachers and children in early education (Dahlberg, Moss & Pence, 1999; Lubeck, 1996; Penn, 1997) the value of a model such as the bio-ecological one is that it provides a

framework which allows the enquirer to visualise the complex dynamics in different contexts. Furthermore, the construct of 'proximal processes' and their role as engines of development is important. The quality of these 'proximal processes' is mediated by social interactions and this provides a link between the structure of development and the processes of development which has implications for the practice of education. This proposal represents a rapprochement between the view of the child as 'structure' and the view of the child as 'agent'; neither is sufficient in and of itself. Against the backdrop of situational and contextual knowledge the bio-ecological framework provides a model within which different educational approaches can be devised drawing on a multi-theoretical perspective.

2.4 Conclusion:

It has been argued (Egan, 1983) that scientific findings from psychology and other social sciences are not strictly relevant to educational practice. On the other hand, Kohlberg and Mayer (1972) have argued that the single most important thing for educators to clarify was the goal of their educational practice. They contend that the only rational way to choose such goals is to base them on valid psychological theories which can in turn be translated into corresponding theories of pedagogy. In this way educators can specify educational outcomes and identify the processes by which they can be reached. Children will be treated differently under the influence of different theories. Whatever the mechanism for linking theory and educational practice most educators depend on past experience and careful observation coupled with information from lectures and texts to guide them in their practice.

Aubrey (2000) goes further and advises that those involved in early education adopt a 'healthy scepticism' towards educational theories and recognise that researchers in the field are in their infancy in respect of knowledge and understanding of learning and teaching in general and theories of child development in particular (p. xii). However, psychology and education are inter-related disciplines with a concern for establishing research based understanding of how children learn and how they can best be educated and many contemporary education practices reflect the influence of psychological research and ideas. The last century has seen remarkable strides in our understanding of the structures, processes and conditions that affect learning and development. Different theoretical approaches have attended to different aspects of the learning/education interface and no single theory provides a sufficient base upon which to establish an absolute statement

regarding the best education for children. Given our current recognition and respect for the role of culture in informing educational principles and practices it is no longer realistic to seek absolute laws governing learning and educational practice.

The portrayal of psychologists as isolated researchers preoccupied with studying a narrow range of phenomena in laboratory or clinical conditions has given way to a reality where research is more likely to be conducted in everyday contexts and to take account of everyday activities. This supports the argument that to gain a fuller understanding of learning it must be examined as a process occurring in a familiar context with familiar activities and relationships. The impact on learning of more distal variables such as societal attitudes and public policy cannot be overlooked. Contemporary research in education and developmental psychology is concerned with addressing the complexity and dynamics of learning and finding a language of explanation that facilitates best practice in the interest of all involved.

Responding to this dynamic complexity has led to a move away from mono-theoretical explanations of learning and teaching behaviour towards a theoretical pluralism (Johnson, 1988). While this is an obvious direction in which to move there are dangers associated with such a trend. If, as much research has suggested, a sound theoretical understanding of learning and development is necessary to inform good pedagogical practice (Athey, 1990; Howes, Phillips & Whitebook, 1992; Johnson, 1988; Katz, 1994; Marcon, 1999; Sylva, 1994a; Vejleskov, 1999) then it is necessary to find a conceptual framework which can accommodate multi-theoretical perspectives. This will provide a context for practitioners within which to apply psychological theory to practice and limit the thoughtless application of elements of theory which may be contradictory or compromise the effectiveness of practice. The growth of interest in ecological and systemic models of development (Gaussen, 2002) in the social sciences is a response to this need for a framework. This chapter has argued that Bronfenbrenner's bio-ecological model of development affords a valuable and useful framework within which to consider child development and educational practice in the early years.

CHAPTER 3

EARLY EDUCATION AND CHILDREN'S LEARNING

Introduction:

Chapter 2 presented a historical review of the emergence of psychology and education as two separate, but related, disciplines. In particular it considered how theories of child development have influenced educational theory and practice concluding that a multi-theoretical perspective on development is most useful in informing educational practice.

This chapter takes a closer look at developments in early educational research and practice and uses the bio-ecological model (Bronfenbrenner & Morris, 1998) of development as a framework to consider how good models of early education positively influence young children's learning. Drawing together findings from a wide range of educational and developmental research it describes contemporary understanding of the dynamic complexity of early learning and argues the need to reconceptualise learning as development. The chapter challenges practitioners and researcher to recognise the central role that children play in their own development and to reconsider curriculum planning and pedagogy to foreground affective over academic cognitive development in early education.

3.1 Theoretical influences in Early Education:

From reviewing the research and policy documents available it is reasonable to assert that, in the western world, the primary theoretical influences on early education from psychology come from the work of Piaget and Vygotsky and their followers. Both these theorists were born in the same year (1896) but the timing of their influence on psychology and education is quite different, reflecting the different life experiences they had. The influence of Piaget has been particularly strong and pervasive. His work has provided an almost universally agreed developmental context for curriculum development and practice in early and elementary education. In many of the early preschool intervention projects, which were designed to facilitate the academic development of young children, the paradigm that guided planning was one that drew its inspiration from his developmental theory. The aims of these projects were to prepare children for school and to compensate

for delays in their development arising from socio-economic disadvantage. This attention to readiness and corrective measures derives from the Piagetian tradition. His influence is evident in many of the curriculum models developed under the constructivist theme, including the one developed for the Rutland Preschool Project in Dublin (Holland, 1979; Kellaghan, 1977, Kellaghan & Greaney, 1993) and the HighScope curriculum which has become popular among early years practitioners in Ireland (Hohman & Weikart, 1995; O'Flaherty, 1995). It can also be seen in the influential handbook on Developmentally Appropriate Practice of the National Association for the Education of Young Children's (NAEYC) published in 1987 (Bredekamp). This document has proved a catalyst for altering practice and also for generating a wealth of international debate and research (Lubeck, 1996; Moss, 1994; Woodhead, 1998, 1999a; Dahlberg, Moss & Pence, 1999) which led to its reformulation in 1997 (Copple & Bredekamp, 1997). Emerging from these publications and initiatives a rich research base on development and learning now exists which continues to challenge both academics and practitioners in psychology and early education.

Although Vygotsky did not write a great deal about the education and development of very young children (Berk & Winsler, 1995) his work has entered the early education literature through the embracing of his concept of Zone of Proximal Development (ZPD) (Vygotsky, 1978) and the increased attention to the socio-cultural nature of development in general. While his influence is, in general, less evident than that of Piaget in the structure of curricular frameworks (Marcon, 1999) it can be observed increasingly in early educational practice. Indeed, Sylva (1997a), in a review of the HighScope Perry Preschool Project, notes that the HighScope curriculum locates itself firmly within the Piagetian constructivist realm, where adults treat children as active learners and arrange their classrooms with discrete, well equipped and labelled areas. Despite this, she argues, the practices clearly embody '*the Vygotskian principles of scaffolding (sic), mediated learning and cultural transmission*' (p. 93). In particular she highlights the 'plan-do-review' routine, central to the daily organisation in HighScope classrooms, as owing less to Piaget than to those who believe in the role of the 'expert' in scaffolding learning. She asserts that irrespective of how the HighScope curriculum is described by its developers and promoters those wishing to understanding the reasons for its impact may profit from considering other theorists, such as Vygotsky, who provide an account of cognitive development within culture. Her comments challenge researchers and practitioners to consider carefully the complexity of theoretical influences guiding curriculum development and pedagogy.

Educational provision for young children is developed and modified according to what people in a society believe is appropriate for them to learn. This depends on the view that society has of early childhood; the position of children in society and the kind of people society wants children to be and to become (David, 1996b). In Ireland, for instance, there has been a shift in general educational policy from considering education in terms of the immediate needs of the individual learner towards seeing it in terms of economic investment (O'Sullivan, 1993; Hyland, 1998) and life-long learning (Ireland, 2002b). The shift does not have to be polarising, one focus may support the other. However, it is important that the needs of a society do not override the needs of the individuals who make up that society. In the complex, global world that contemporary Western society has become the focus of education is shifting away from knowledge and skills towards attention to the development of aptitudes and attitudes that will equip young people to function well under conditions of complexity, change and uncertainty to help them become effective real-life learners. Learning to learn and life-long learning have been identified internationally as a key aim of education for twenty-first century and Ireland is no exception (Ireland, 1999b; Ireland, 2002b; Wells and Claxton, 2002). Policy makers have recognised that investing in education, particularly to overcome educational failure, is worthwhile, because without such investment the economy and society eventually pays for it in other ways such as social welfare, justice and health costs. One area that is recognised as particularly important to the life-long learning approach is early education.

Much of the current pedagogy of early education in the western world is underpinned by certain ideologies or systems of beliefs which include attention to the whole child; integrated rather than compartmentalised learning; starting from the children's own concerns, abilities and interests; valuing first hand experience and play; ensuring time for self-regulated activity bouts; and opportunities for interaction with other children and with adults. There is also a trend to develop a pedagogy which shows respect for all children as valued human beings with a right to equality and opportunity (David, 1996c, 1999c; Nutbrown, 1996; UNCRC, 1989). The influence of some of these beliefs can be seen in a number of recent Irish policy documents including *the National Children's Strategy* (Ireland, 2000a) has identified the importance of considering the 'whole' child in policy development and both the *Primary School Curriculum* (1999b) and the *White Paper on Early Education* (Ireland, 1999a) emphasise the value of integrated learning and starting with the children's own interests and concerns.

Educational effectiveness and later school success has been a focus of educational writing, research and policy attention since the inception of compulsory education in the late nineteenth century. Internationally, one area of particular interest has been the impact of early educational experience on later outcomes for children. The benefits of different approaches to early childhood education have been debated for years and can be traced back to authors such as Rousseau, Froebel and Montessori (Hayes, 1999).

Initially research into the effectiveness of early education was concerned with the simple question – does it have a positive impact? Many different studies were designed to answer this question and did so to varying degrees. Osborne and Milbank (1987) carried out one of the most comprehensive studies addressing the research question of whether or not early education in general can be isolated as singularly beneficial to young children. Their detailed review of the impact of early education, drawing on the existing research data of the UK Child Health and Education Study, confirmed that preschool experience was a significant factor of influence in later child development and behaviour in and of itself.

3.2 Growth of Research Interest in Early Education:

Since the mid-twentieth century the benefits of early, or preprimary education, particularly for children considered to be in danger of school failure, have been debated. The initial impetus for investment in preschool as a means of combating school failure came from the United States. Attention to early education arose as a result of the belief in the normative distribution of intelligence across the whole population and a concern that children from some social groups were not being given the opportunity to develop their full potential because of adverse early experiences. It was argued that investment in compensatory, early intervention progammes would benefit poor children, who were considered disadvantaged in the educational system even before they enrolled in elementary school, and prepare them for school (Hayes, 1983; 1995). Investment in the latent potential of such children was seen to be economically and socially prudent. At the time of these studies there was a belief that even minimal intervention in the early years would have positive and lasting effects on such measurable outcomes as a child's IQ (Zigler, & Trickett, P, 1978; Kagan & Neville, 1993), reflecting a particular view of the child as progressing through defined stages of development which were susceptible to acceleration and a particular view of education and learning reflecting a mechanistic, 'input – output' approach.

The role of early education in combating educational disadvantage has been an important driving factor in influencing the modest investment in early education outside of primary school which has occurred in Ireland over the latter part of the twentieth century (Hayes, 1995; 2001). The concept of educational disadvantage itself continues to generate much debate in Ireland (Boldt, 1996; Boldt & Devine, 1998; Hayes & Kernan, 2001; Kellaghan, 2002) and the limited effectiveness of early intervention initiatives (Kellaghan & Greaney, 1993; McGough, 2002; Ryan et al., 1998) has led to calls for more detailed analysis of how young children are learning and what might be most effective for them now and in their future (Hayes, 1995; Hayes et al., 1997; McGough, 2002).

Because of the level of investment, internationally, in early education as a mechanism for improving the school success of 'at risk' children, many of the interventions have been evaluated for cost-effectiveness. This requirement to measure the success of investment is a characteristic of contemporary society and has had a positive effect in increasing the research base in early education in particular. Such studies have been a rich source of data and have contributed to making early education a research rich domain which has responded innovatively to the research and practice challenges posed by continued evaluations. However, it is important to heed the warning from Pascal and Bertram (1999) *'... that what we are measuring is significant and that we are not simply focusing on those things which are easily measured'* (p.95).

A new drive for research in the field of early education emerged in the latter part of the 20th century with the increased use of a variety of diverse services in early childhood care and education internationally. Accompanying state investment in early education, as an intervention to combat later school failure, has been a growth in the development of private and community based service for young children and their families. For many parents it was considered desirable for their children to attend playgroup or kindergarten. For others it was a matter of economic necessity facilitating the entry of both parents into the labour market (Hayes, 2001; Ireland, 1999c). This strand of research has tended to look beyond cost-effectiveness and the needs of the disadvantaged to attend to wider questions about the impact of the early childhood experiences on children from birth through to school age, their families and those working in the field (Andersson, 1989, 1992; Clarke-Stewart, 1991).

Research in early education has grown from strength to strength in the US since the 1970s (Bowman et al., 2001). However, while there was support for large-scale research in ECCE in the 1970s and early 80s in the UK (Bruner, 1980; Smith & Connolly, 1980; Sylva, Roy & Painter, 1980) there was only limited research in early education there from the mid-80s to the mid-90s (Aubrey, David, Godfrey, & Thompson, 2000). Over the last decade, however, there has been increased investment in early education with increased investment and the establishment of the a national system of 'centres of excellence' (DfEE, 1997) and funding for large-scale research studies such as the Effective Early Learning (EEL) study (Pascal & Bertram, 1997) and the Effective Provision of Preschool Education (EPPE) study (Sylva, Melhuish, Sammon, Siraj-Blatchford, Taggart & Elliot, 2003). The EEL project is working closely with practitioners in the United Kingdom and Northern Ireland to define, provide for and evaluate quality and effective early education and the EPPE study is using multi-level modelling to enable the identification of distinct effects of early education on later achievement in children.

In line with other countries in the late 1960s Ireland initiated a preschool intervention project known as the Rutland Street Project. It was evaluated at the time (Holland, 1979; Kellaghan, 1977) and results mirrored those of other such studies with a modest and immediate impact on IQ score levels for the project children followed by a fading of this impact over time. The establishment of the Rutland Street Preschool was a pilot project and it was not replicated until the 1990s when the Early Start educational intervention projects for three year olds were established (Ryan, O'hUallacháin, & Hogan, 1998). There was virtually no investment in, or research of, the early educational sector during the 1970s and 1980s. Coolahan, in his address to the National Forum on Early Childhood Education (Ireland, 1998) observed that '*very little research on early childhood education has taken place in Ireland. It was as if the problems of little people were also regarded as little, not meriting the serious attention of politicians and others in the real adult world*' (p. 7). However, the 1990s saw a renewed interest in early education among academic researchers and a number of studies investigating the policy and practice in Irish early education have been published (Delaney, 1997; Hayes et al., 1997; Hayes & Kernan, 2001; Hennessy & Hayes, 1997; Hennessy & Delaney, 1999; Hickey, 1997; Horgan, & Douglas, 1998; Horgan, & Douglas, 2001; Kellaghan & Greaney, 1993; Kelly, & Kellaghan, 1999; O'Flaherty, 1995; Ryan et al., 1998).

This growth of interest in the broader field of early education is also evidenced by the growing number of international conferences on the subject including the annual European Early Childhood Education Research Association Conference; the Warwick International Early Years Conference and the Reconceptualising Early Childhood Conference where opportunities are provided for the growing number of academics involved in research to come together. In addition gatherings such as the annual conference of the National Association for the Education of Young Children and the World Child Care Forum provide researchers and practitioners with an opportunity to engage with a wider audience. In addition, education conferences such as that hosted by the Education Studies Association of Ireland (ESAI) are increasingly including contributions from early education researchers and practitioners. Nationally the first conference of post-graduate research in early education was held in the Dublin Institute of Technology in 2002 where there were 20 presentations. The establishment, in 2001, of the Centre for Early Childhood Development and Education, in response to the *White Paper on Early Childhood Education* (1999a) is also an important indication of national developments in the field. It has a specific research brief and one of its first actions was to publish a research audit of early education in Ireland to identify what aspects of early education have been researched and what areas need attention (Walsh, 2003).

Along with these developments there has been a growth in the coordination of research information through such mechanisms as the ERIC Clearinghouse for Early and Elementary Education coordinated through the University of Illinois. There is also a proliferation of journals including the Australian Journal of Early Childhood Education, the Early Childhood Research Quarterly, the International Journal of Early Childhood, the International Journal of Early Years Education and the European Early Childhood Education Research Association Journal.

3.2.1 *Early education as an intervention:*

Early evaluation studies of intervention projects were policy directed and focused on the degree to which early education yielded measurable, positive child outcomes. The children in these studies were, in the main, within the age range 3 – 5 years. Evaluations, particularly those in the United States, have been reporting positive effects – short and long-term – since the 1970s (Berreuta-Clement, Schweinhart, Barnett, Epstein & Weikart, 1984; Campbell & Ramey, 1994; Lazar & Darlington, 1978; Zigler & Valentine, 1979). While studies did find a positive impact on measured IQ at the end of interventions, the IQ

gain faded over time, particularly in the absence of additional school based support. Initially there was disappointment at the perceived transience of the results among policy makers and some federal and state funding in the US was withdrawn from well-known intervention programmes such as Headstart. However, a number of researchers, mainly located within academic and research institutes, continued to evaluate the impact of a variety of different approaches to early education over time and their results began to highlight the limitations of evaluating effectiveness in terms of a simple IQ measure.

Marcon (1992, 1999), in her review of longitudinal research studies, argues that a weakness of most of the studies into early educational impact was their focus on intervention programs, such as the US Headstart programme rather than early education in general. Typically the aim of such intervention programmes, in Ireland as elsewhere, has been school readiness, with a focus on development of the cognitive and academic competencies needed to succeed in school (Ireland, 1999a). Marcon (1999) is concerned that this particular approach has focused too much on outcome measures such as IQ scores, literacy and numeracy achievement, leading to a conceptualisation of early education as the appropriate start for primary schooling, especially for low income children. This tendency is exacerbated, she argues, when preschool education is absorbed into the primary education system with a focused, externally imposed curriculum. In particular, the trend to a downward extension of the primary curriculum with formal instruction for children of 4 and 5 years has raised concern over the appropriateness of formal instructional practices for young children (Katz, 1988, 1993, 1999a; Banks, 2000). This has generated further debate about how young children learn at this level. Many authors are calling for a review of early educational practice amid concerns that too early a focus on academic skill development is inappropriate for the young learner (Bredekamp & Copple, 1997; Elkind, 1987, 1988; Hayes, 1995; Marcon, 1999; Zigler,1987).

3.2.2 *Differential effect of early educational models:*

Many of the earliest studies into effectiveness sought to identify evidence of the superiority of one approach to early education over another in terms of outcomes. Given the variety of different approaches and models of early education that have evolved worldwide this branch of research has generated a vast amount of literature (Goffin, 2000; Roopnarine & Johnson, 2000; Stipek, Feiler, Daniels & Milburn, 1995). This section only reviews a portion of that literature.

The search for a universal curriculum model for early education is doomed to failure. Children, adults and societies differ and values and expectations vary. Studies into the differential impact of curricula have found that while initial evaluations suggest that there may be no great difference between programmes in terms of immediate child outcomes, longitudinal studies suggest significant differences in favour of activity rather than academic based curricula. Such curricula balance child-initiated activity with academic-directed opportunities and impact positively on children's social and cognitive development (Clarke-Stewart, 1991; Epstein, Schweinhart & McAdoo, 1996; Goffin & Wilson, 2001; Jowett & Sylva, 1986; Nabuco and Sylva, 1995).

In 1967 Weikart commenced a preschool curriculum comparison project (Hohman & Weikart, 1995; Weikart & Schweinhart, 1997). This project carried out a follow-up study of children attending three different programme types: the Cognitively-Oriented HighScope curriculum (an activity-based prgramme), a Unit-Based Curriculum (a play based, nursery school model) and the Language Training Curriculum (an academic direct-instruction programme). They found that initially there was very little difference in the child outcomes for the children across the programmes but compared to children with no early educational experience the impact was positive, a finding similar to that found by Osborne and Milbank (1987) in their review study. Over time, however, differences began to emerge with children in the academic programme beginning to fall behind the children from the other two programmes. More detailed analysis considered the impact of the programmes on measures such as schooling, household and family, employment and income, personal and community activity and misconduct and crime (Weikart & Schweinhart, 1997, p. 35). Results indicated that those children who had attended the activity-based curriculum showed the most positive outcomes on all measures with those attending the more traditional, play-based programme next in line. Those children who attended the academically directive programme showed least social and educational gain.

More recent studies designed to evaluate the effectiveness of publicly supported early educational intervention programmes in the Washington DC area (Marcon, 1999) have found results that appear to support the work of Weikart and his colleagues in Michigan. Marcon argues that these results indicate that an academically oriented programme shows least beneficial effect on young inner-city children and a 'mixed' programme, with some traditional academic methods balanced by more play-based, active learning does not yield

the positive results the fully committed activity based programme does. The trajectory of difference, favouring the latter, appears to widen as the children progress through school.

Marcon's findings (1999) that a 'mixed' model, advocating a combination of child-initiated and academic-directed activities, was associated with mediocre outcomes for children is noteworthy because it is often advocated as providing the best mix for younger children as they prepare for formal primary school. She found that in her study this reflected a lack of any clear theoretical orientation among the staff interviewed rather than a soundly based approach. Her analysis of programmes indicated that a sound understanding, among the staff, of the theoretical basis for the programme offered was central to any positive impact on child outcomes. She cautions, however, that her findings should not be taken to suggest that a more theoretically sound intermediate or 'mixed' approach – such as that guided explicitly by the Vygotskyan socio-cultural approach – would not be effective. She goes further and notes '*a Vygotskian approach ... may provide the most practical solution to the public school debate about developmental and academic orientations*' (p. 373) but goes on to observe that policy makers '*frequently believe that earlier academic preparation ... will best prepare young children for school-learning*' (p. 373). Her research suggests that this is not the best approach as it does not lay the basis for later school success. The importance of a sound theoretical basis for quality early education has been widely noted. In 1996 the European Commission Childcare Network concluded its work with a ten-year action plan for quality in early years services (European Commission, 1996), which contained forty quality targets for governments. Marcon's findings endorse target 16 in particular: it demands that all collective services for young children (0-6), whether in the public or private sector, have coherent values and objectives including a stated and explicit educational philosophy.

Sylva and Wiltshire (1993) reported that the impact of early education is found across all social groups but is strongest in children from disadvantaged backgrounds where quality early education is particularly effective in both social and educational terms (Ball, 1994: O'Flaherty, 1995). There is, however, a need for caution in promoting a single approach as research also suggests that different models of early education may be gender sensitive. Marcon (1993, 1999) reports that the development and achievement of disadvantaged, inner city boys is fostered by settings that emphasise socio-emotional growth rather than models providing an overly academic, didactic experience. While studies identify measurable and lasting benefits across all domains of development analysis of the data

suggests that the most important learning in preschool is not academic learning but learning in the area of aspiration, task commitment, social skills, responsibility and feelings of efficacy in the child (Rutter, 1985; Sylva & Wiltshire, 1993).

Research continues to demonstrate the effectiveness of high quality early education (Gilliam & Zigler, 2000; OECD, 2000). Many studies have attempted to assess the effectiveness of early education in terms of later social and educational success (Andersson, 1989, 1992; Campbell, Pungello, Miller-Johnson, Burchinal & Ramey, 2001; Campbell, Ramey, Pungello, Sparling & Miller-Johnson, 2002; Clarke & Campbell, 1998; Kontos, Burchinal, Howes, Wisseh & Galinsky, 2002; Reynolds, Temple, Robertson & Mann, 2001; Schweinhart, Barnes & Weikart, 1993;Weikart and Schweinhart, 1997; Woodhead, 1989). The positive findings shed light on the complexity of the effect of early childhood education and have generated increased commitment to developing interventions, particularly for children considered at risk of educational failure. However, authors have warned that the pressure for measurable outcomes may in fact mitigate against appropriate practice in such interventions if too much attention is given to school readiness and to the academic over aspects of socio-emotional and affective development (Marcon, 1999; Goffin, 2000).

3.2.3 *Initial research focus in early education:*

A review of early research studies reveals that they focused primarily on the social organisation of the settings, immediately measurable child outcomes and cost-benefit analysis. With time this trend gave way to a search for traceable links of the impact of educational structures and processes on child development outcomes. The pattern of research from the 1970s included studies on teacher style and language interaction (Tizard & Hughes, 1984) play (Hutt, Tyler, Hutt & Christopherson, 1989; Smilansky, 1968), spatial design, layout and materials (Nash, 1981; Smith & Connolly, 1980), child activities (Sylva, Roy & Painter, 1980) and group size and ratio (Smith & Connolly, 1980; Sylva et al, 1980).

Tizard et al. (1984) found that the complexity of language interaction between adult and child was significantly higher for mother-child dyads in the home than that observed in early years settings where the adult-to-child ratios was characterised as less favourable. Her study suggests that as the number of children increased or the number of staff decreased children's interactional groups became larger. Under these conditions, children

were found to talk more frequently to teachers but they were less likely to elicit a teacher's response. Spatial layout and equipment and materials also had an effect on children's behaviour. Smith & Connolly (1980) found that different types of materials had very specific effects on social-cognitive aspects of children's behaviour through encouraging autonomy, enhancing concentration and fostering social interactions. For example, more open-ended materials, such as clay and blocks, resulted in more sustained activity than more explicitly defined materials such as puzzles. They also found that the level of teacher involvement influenced interactive behaviour and the quality of play, even during free-play, where the adult had minimal involvement. The relationship is, however, complex (Kontos & Wilcox-Herzog, 1997) and, in some cases, the absence of an adult led to more mature play (Pellegrini, 1984). In terms of activity types Sylva and her colleagues (1980) found that activities such as art, constructive play and structured materials were high yield in terms of cognitive stretch, concentration and perseverance, manipulative activities were moderate yield and gross motor and games were low yield by this measure. Children's competent interactions with objects have been shown to correlate with standardised measures of cognitive ability in young children (Dunn, 1993). Pellegrini and Perlmutter (1987) found that children's behaviour also varied according to where they played. Solitary-constructive behaviour was more likely to be observed at art centres whereas social-dramatic behaviour was more evident in housekeeping and block centres.

Reflecting a greater awareness of the importance of the social aspect of child development more recent research has been designed to take account of the dynamics of development in context offering a more specific and comprehensive analysis of variables, and their interactions, within early educational settings. Studies have considered the relationship between variables such as teacher training and the impact on child outcome measures (Whitebook, Howes & Phillips, 1989); adult-child ratios and child development outcomes (Howes et al., 1992); face-to-face interactions between children and adults in context (Dunn, 1987) and peer collaboration (Rogoff, 1990; Corsaro, 1992; 2003). Broader issues related to gender, diversity, multiculturalism and a growing interest in children's subject-specific development in language and early literacy development, emergent mathematics and numeracy, children's conceptions and misconceptions in science as well as their thinking and problem solving in other areas have also been addressed. In line with the growing attention in child development research to the child as an individual with rights research studies in early education have increasingly endeavoured to include the views of children themselves (Carr, 2000; Langsted, 1994; Smith, 1999; David, 1996c).

In terms of methodology, observation has always been a well-regarded method in early educational research. Pellegrini considers that research observing children's interaction is an ecologically valid approach to assessing children's development and yields an accurate indication of children's typical levels of competence (1996). There is a pattern to the use of observational research in early education over time which began with a simple description of child behaviour and/or teacher behaviour in early educational settings (Isaacs, 1937; Weikart, 1981). Observation has been used, mainly for regulatory purposes, to assess the quality of early educational services through attention to structural aspects (Whitebook et al, 1989; Williams, 1995). Studies have become more targeted since the 1980s with observational research designed to study the process and structural variables within early childhood settings (Harmes & Clifford, 1980; Harmes, Clifford & Cryer, 1998; Howes, 1997; Kontos & Keyes, 1999; Kontos et al., 2002; de Kruif, McWilliam, Ridley & Wakely, 2000; Sylva et al, 1980) and to quantify the contribution of structural and process variables to quality in early education (Cryer, Tietze, Burchinal, Leal and Palacios, 1999)

3.2.4. *Researching the impact of setting context characteristics:*

From the wide range of research studies certain factors emerge consistently as important to young children's development. Setting characteristics such as group size and adult:child ratio have emerged as a key factor although authors differ as to the exact numerical threshold. Results from a study by Blatchford, Baines, Kutnick & Martin (2001) suggest that, at reception level (4-5 year olds), a group size of 25 is an important threshold. An earlier study concluded that small classes in the first years of formal education were beneficial to children's later school success with a recommended optimum ratio of 1:15 (Nye, Boyd-Zaharias, Dewayne Fulton and Wallenhorst, 1992). A similar finding was reported by Howes, Phillips and Whitebook (1992) who concluded that preschool classrooms with fewer than 18 children were more likely to facilitate developmentally appropriate activities than those in classes of larger groups. There have also been arguments made for a cultural dimension to be considered in respect of adult:child ratios. In certain countries, such as Japan and China, comparatively high ratios are acceptable in effective early education (Siraj-Blatchford & Wong, 1999)

Blatchford et al. (2001) also found that where small group sizes were in evidence they tended to be of 4-6 children. This group size was favoured by teachers as it facilitated teacher input, child concentration and child contribution. They further note that a meta-

analysis showed the pedagogical advantages of small group instruction in terms of peer learning, flexibility over learning objectives, meeting individual needs and encouragement of higher-order learning skills. It is probably true to say that there is broad agreement among researchers and practitioners that smaller class sizes enable teachers to provide better quality education on the assumption that there is more time for interactions which may be considered an important mediating mechanism for development and learning. Large scale studies in the US have found that a reduction in class size to 15 children for children aged 5 to 8 years leads to increased achievement in reading, maths and sciences in later school and fewer repeat years (Bowman et al, 2001). In a report from the Tennessee Student-Teacher Achievement Ratio (STAR) project Finn and Achilles (1990) are categoric in their conclusion that small classes yield significant and long-lasting improvement in academic achievement. When compared to counterparts in regular classes children attending classes of 18 children or less reached more advanced levels of achievement in maths, reading and word study skills. The gains were greatest for those students identified as low-income or minority. These findings were also found when the STAR students were compared to students in larger classes where the adult:child ratio was improved by the presence of teaching assistants. Other research considering whether group size or ratio is the critical factor has also found that improving adult:child ratio by the addition of staff to the group is not as effective as decreasing class size (Mosteller, 1995 cited in Bowman et al., 2001). The research, however, is not conclusive and some research suggests that while smaller class sizes do benefit young children there are questions about the merit of generalising of the results and that simply lowering the class size may be insufficient to guarantee positive effect (Goldstein & Blatchford, 1998; Pellegrini & Blatchford, 2000). The dynamic of the system and the impact of contexts nested within the classroom itself must also be taken into account. There will, for instance, be a different impact on the child of whole group work in a group of thirty children compared to the impact of working in one of six groups of five children.

The research literature highlights the fact that it is the manner in which clusters of factors interact that shapes the quality of children's experiences. As far back as 1978 the US National Day Care Study (Ruopp et al.) found that adult:child ratios contributed only minimally to developmental effects for preschoolers in centre-based care. Group size and specialized staff training emerged as the strongest predictors of positive classroom dynamics and child outcomes. In classrooms with smaller group sizes teachers engaged in

more social interactions with children, children were observed to be more cooperative, innovative and involved in tasks and made greater gains on cognitive tests.

Adult characteristics have been found to have an important impact on child outcomes. The importance of investment in high quality training for those working in early education has emerged as an important feature from a number of studies (David, 1999b; Lamb, 1998; Podmore & Meade, 2000). The National Child Care Staffing Study (Whitebook, Howes and Phillips, 1989) noted that staff were more sensitive and showed more appropriate behaviour if they had completed more years of formal education, received specific early childhood education training at college level and earned higher wages. Specifically, they concluded that levels of teacher education and training were associated with more positive child-adult interactions, a finding endorsed by the work of the New Zealand Council for Educational Research (Podmore & Meade, 2000). Howes, James and Ritchie (2003) have found that while degree level (BA) education in early education was associated with more effective teaching, responsive involvement with children, even among staff with less training, was evident where there was a good system of mentoring and supervision.

Adult-child interactions has also emerged as a key variable in quality early education and must be finely balanced to meet children's individual developmental needs and to allow appropriate opportunities for child-initiated learning. The nature of the working interaction between children within settings, and the adult role, has been recognised as important because, while children may work *in* small groups, there is no guarantee that they will work *as* a group (Tizard, Blatchford, Burke, Farquhar & Plewis, 1988). Kontos & Wilcox-Herzog (1997) note, however, that while responsive interactions between teachers and children are often presented as important in early education (Hendrick, 1996; Spodek & Saracho, 1991; Bredekamp, 1987; Bredekamp & Copple, 1997) and these assumptions about practices beneficial to young children are supported by developmental theories, they are endorsed less clearly by data. In a review of research on the impact of interactions on children's competence they note that positive relationships, negative relationships and mixed relationships have all been found in a variety of studies sampling different populations of children using a variety of observational strategies. In their study they measured children's cognitive and social competence by observing their interactions with peers and objects during free play. Results show that, when age and cognitive competence were controlled, children's social competence was positively related to peer contact and teacher involvement and negatively related to teacher content. They argue that this gives,

empirical support to the assumption that it is teacher practices which are positively associated with children's competence. More recent research has concluded that the closeness of the teacher-child relationship was positively related to both cognitive and social outcomes (Peisner-Feinberg, Burchinal, Clifford, Culkin, Howes, Kagan & Yezejian, 2001).

Although ratios and group sizes are important predictors of quality and adequate staffing sets the scene for positive adult:child interactions, compliance with staffing standards does not guarantee quality. Other factors such as staff training, the availability of materials, the theoretical orientation of the setting and the organization of the environment will influence the nature of the child's experiences. The increased recognition of the contributions of process characteristics to the quality of early childhood settings has presented a challenge to researchers to develop reliable and valid measures of setting process. Structural and process variables differ in that structural variables are critical for quality, but their mere presence does not guarantee it. Lamb (1998) notes that '*.... centres that are characterized by good adult-child ratios and are staffed by well trained providers may still provide care of poor quality. Extensive training, education and experience, like generous adult:child ratios, have to be translated into sensitive patterns of interaction, displays of appropriate emotion, and the intuitive understanding of children that make the experiences richly rewarding for children*' (Lamb, 1998, p.75). Process variables associated with the dynamics of the service, the day-to-day interactions, though difficult to assess, have a direct bearing on the quality the environment and the impact on children.

Cryer et al. (1999) found that no one structural characteristic strongly related to the processes of early education, rather many structural variables work together to create process quality. The microsystem of the classroom is influenced by a wide sphere of other systems and the authors contend that the most promising intervention strategies to improve quality would address changes in all spheres of influence simultaneously.

On the importance of considering process variables David (1999a, 1999b) has highlighted the importance of relationships and interactions in early learning. She goes so far as to argue that in the early years 'teaching is about relationships' (1999a, p. 1) and enumerates the many relationships and interactions children and adults must negotiate in early childhood settings. In interviewing children about their early years experiences Huttunen (1992) found that what older children in Finland valued most about their early educational

experiences up to age seven were the relationships formed. Early educational research has expanded our knowledge and understanding of the importance of interactions and relationships and their role in effective pedagogy (Arnett, 1989; Clarke-Stewart & Gruber, 1994; Pollard & Filer, 1996). Interactions are considered one of the most important variables in determining the quality of an early years setting, critical to the development of self-regulation (Bronson, 2001), learning dispositions (Carr, 1998, 2001a, 2001b; Katz, 1985, 1993) and general facility with learning to learn in a learning community (Claxton, 1990).

Neither structural nor process variables alone yield quality early education and researchers and educators are agreed that influencing variables are interdependent. Phillips (1987) proposed that effective early education derived from a configuration of factors with no individual indicator having a determining effect on child outcomes. The European Childcare Network (European Commission, 1996) also recognized the interrelatedness of quality indicators and argued that taking any of them in isolation may be meaningless and misleading.

3.2.5 The influence of expectations and beliefs on early education:

Classrooms are complex learning environments with many overlapping interactions between children, adults, materials and ideas. In addition to being influenced by the learning environment and the people therein, children are also influenced by the beliefs others have about how and what they should learn. Children learn in social and physical environments, developmental niches (Super and Harkness, 1986), the characteristics of which are, to a large extent, determined by adults but influenced by all elements. Based on their beliefs about development and their expectations, adults select and provide experiences they believe are important for children and will prepare children for their future. These socialisation processes occur at different levels and so can be studied at different levels (Bronfenbrenner, 1989; Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Morris, 1998; Greene, 1994, Greene & Moane, 2000). Research on teaching effectiveness has shown that teachers have implicit beliefs about subject matter, their students, their own roles and responsibilities and these all influence the way they behave in the classroom (Bowman et al., 2001). Parents also have beliefs and expectations and, with increased attention to including parents in education (Ireland, 1999a, 1999b), these beliefs and their match to those of teachers become an important factor of influence in early educational practice.

A great deal has been written about parental values and beliefs regarding early education in the sociological and psychological literature although there is little definitional or conceptual clarity (Tudge, Hogan, Lee, Tammeveski, Meltsas, Kulakova, Snezhkova, & Putnam, 1999). Tudge et al. found differences in parental beliefs between socio-economic groups and across cultures. While it is difficult to determine whether an observed relationship is causal or simply an adult response to the child Campbell, Pungello, Miller-Johnson, Burchinal and Ramey (2001) found a small but significant relationship between parental beliefs and academic competence and achievement. Sigel (1985) found a moderate relationship between parental beliefs and positive child outcomes and Kontos (1991) found that family variables (including beliefs) are more important for cognitive and language development than preschool setting variables which predominate for social development.

While parental beliefs may influence children's development (Sigel 1985) beliefs about their children's learning seems also to direct parents in their choices of early education (Hyson, Hirsch-Pasek & Rescorla, 1990). Hayes et al (1997) found that parents of four year olds at preschool ranked the development of social skills with peers as most important for their children while parents whose four-year-olds were attending the primary school ranked the development of pre-academic skills as most important. It is, however, not possible from the data to determine to what extent parents selected early education settings on the basis of their beliefs.

International research suggests that there are differences between the expectations and beliefs of parents and teachers with parents believing that early education should concentrate on language and school-related skills while teachers disagree with a strong emphasis on academics and see the role of early education as more wide-ranging and less specialised (Carlson & Stenmalm, 1989; Higgins-Hains, Fowler, Schwartz, Kottwitz & Rosenkoetter, 1989; Knusden-Lindauer & Harris, 1989; Rusher, Mcgrevin & Lambiotte, 1992). On the other hand recent Australian research seems to suggest that parents see the primary role of early education as facilitating children's social and emotional development, with preparation for school and academic skills being considered secondary (Lockwood & Fleet, 1999; Page, Nienhuys, Kapsalakis & Morda, 2001). In their study Dockett and Perry (2002) conclude '*that teachers and parents are keen to have children start school in ways that promote their interactions with other children and teachers, in positive group settings,*

where children can assume independence in expressing their needs. Teachers and parents seem more concerned that children want to go to school and are happy at school, than they are about starting school with an .... array of skills and knowledge' (p. 82). While parents and teachers in Ireland both ranked the development of social skills with peers as important, Hayes et al. (1997) found that the development of social skills with adults was ranked as least important for four-year-olds by teachers and found to be moderately important to parents.

Differences between parent and teacher expectations may be accounted for in terms of the differing relationship they have with the child. The prevailing view is that the closer the match between the beliefs, values and expectations of parents and teachers the better it is for the child (Bartholomew & Gustafsson, 1997; Carlson & Stenmalm 1989; Kellaghan, Sloane, Alvarez & Bloom, 1993). Although one might expect that marked differences in beliefs would lead to stress in children, Karwowska-Struczyk (1999) contends that low congruence between parents and teachers may have a positive effect. She argues that where adults in the two primary settings in which children spend their time have different priorities this might provide a challenge to children in moving between the settings and provide a wider range of opportunities and experiences which might encourage the child to develop skills different from those or more diverse than if there was high congruence across the settings.

Studies into the relationship between teacher beliefs and expectations, practice and child outcomes are not unequivocal in their conclusions with some research finding that there is a relationship (Isenberg, 1990) while others are less definitive (Charlesworth, Hart, Burnts, Thomasson, Mosley & Fleege, 1993; Marcon, 1999). Entwisle (1995) found that teachers who make demands on children and have high expectations of their competence promote student learning and higher achievement levels and this may be because such teachers provide a wider range of activities. By contrast children in classrooms where teachers had low expectations tended to show lower achievement. Saracho (1991) found that teachers with high expectation for young children exhibited more developmentally appropriate practice in their classrooms than teachers with lower expectations. Charlesworth et al. (1993) found a moderate relationship between expressed beliefs and practices which suggests that teachers' stated beliefs on the importance of developmentally appropriate practice was stronger than their observed classroom practice. Other studies have also found that where there is a discrepancy between teacher beliefs and teacher

practice the teacher beliefs were more developmental than their observed practice (Bennett & Kell, 1989; INTO, 1995; Stipek & Byler, 1997)

While international research suggests that teachers tend to disagree with a strong emphasis on 'academics' (Bennett & Kell, 1989; Higgins-Hains et al, 1989; Rusher et al, 1992), studies have found that teachers working within early education and trained outside the elementary or primary system favour less frequent use of teacher-directed activities when compared to their teacher trained peers (File & Gullo, 2002; Kernan & Hayes, 1999; Smith, 1997). A review of play in reception classes in the UK (Keating, Fabian, Joran, Mavers and Roberts, 2000) found that teachers were more comfortable with the familiarity of an academic curriculum and found a tension between their practice and their belief in the value of play as a medium for learning. Irish research has found that primary trained teachers in designated disadvantaged schools ranked the development of pre-academic skills as more important than their colleagues in pre-school and schools not so designated (Kernan & Hayes, 1999). This study also found that self-assessment skills for children were ranked as among the least important skill for early education by teachers in primary schools reflecting a lack of agreement with contemporary views in early education as to the importance of developing dispositions to learn, aspirations, task commitment and feelings of efficacy among young children (Carr, 2001b; Hohman & Weikart, 1995; Rutter, 1985; Sylva & Wiltshire, 1993). Stipek, & Byler (1997) found that parents were the most often cited source of pressure on teachers who felt unable to implement programmes they considered appropriate to young children - a finding also revealed in Irish research (INTO, 1995).

3.2.6 Summary:

A review of the research findings from early education suggests that development is enhanced if class sizes are small, classrooms are child-focused and well organised, with teachers playing a facilitative role rather than a didactic one (Howes & Olenick, 1986; McCartney, 1984, Bowman et al., 2001). High quality classrooms are those in which teachers interact with children in a responsive and informative way, encourage verbal interaction and are not harsh with children (Arnett, 1989; Clarke-Stewart & Gruber, 1994). Organisation and structure are important and are provided by adults who carefully plan and prepare the learning environment (Bredekamp & Rosegrant, 1992; Schweinhart, 2002) and who have high expectations of children in terms of social and linguistic development.

The research also suggests that classes facilitating more involvement with and attention to activities by children themselves result in their learning more skills and concepts, including the kind of knowledge that gets tested on achievement measures. In addition, children from such classes show more cognitive advance and have more verbal and social skills. This may arise because attending longer or more intently to interesting activities gives children practice in attending, a skill highly valued by kindergarten teachers (Charlesworth et al 1993) or because making decisions and having some responsibility for their own learning and actions may help children internalise control or engender 'the dispositions in children that enable them to achieve greater success' (Schweinhart, Barnes and Weikart, 1993). Perhaps the explanation lies in the fact that children may just be happier, and so better motivated, and may, in turn, be responded to more positively by their teachers.

3.3 Quality in Early Education:

Results from a number of well-designed, longitudinal studies have given clear evidence of the short and long-term positive impact of early childhood education, particularly in respect of disadvantaged and poor children. However, one needs to be cautious in generalising such findings to conclude that early education interventions, by their very existence, will overcome educational disadvantage and repay the investment in terms of long-term savings. This is to misunderstand the reality that many of the most widely quoted studies have been carried out in well resourced, carefully designed, high quality early educational settings. To develop effective early education requires careful attention to what it is that characterises such quality provision.

Standards and indicators of quality have grown out of early childhood research (Bowman et al., 2001; European Commission, 1996). In the United States the National Day Care Study (Ruopp et al., 1978) was the first major study to examine the impact of regulatable structural features on children's experiences in settings and their developmental outcomes. The positive influence of small group size on process characteristics such as adult-child interaction and children's active participation was clearly demonstrated. More recent studies (CQO, 1995, 1999; Cryer et al. 1999; Layzer, Goodson, & Moss, 1993; NICHD Early Child Care Research Network, 2000; Whitebook et al., 1989) have added to our knowledge base about the relationship between both structural and process indicators of quality and child outcomes while others demand careful attention to the social and cultural

context of early education and the needs of children and their families (Eldering & Leseman, 1999).

3.3.1 *Defining Quality:*

Quality is often perceived as a relative concept, influenced by values and beliefs with definitions evolving and changing over time. From this perspective quality is seen as closely bound up with culture and contexts. Adherents to this cultural-dependent view believe it is not possible to be definitive about the balance of characteristics which, together, might yield a universally acceptable description of what quality means in early childhood care and education. Rather, defining quality is a complex and continuous process, one which Moss (1994) has argued is also political in nature. To make matters even more complex, in discussing definitions of quality the importance of particular stakeholder perspectives cannot be ignored (Farquahar, 1990; Katz, 1992, 1995b; Moss & Pence, 1994). The recognition of various stakeholder perspectives on quality, and the inclusion of these views in the process of defining quality in early childhood services, represents an emerging view. Moss (1994) suggests that discussions among stakeholders '*involve interplay, negotiation and possible conflict between and sometimes among, those stakeholder groups who are included and who may have different perspectives*' (p. 5).

Moss and Pence (1994) state that historically the approach to defining quality has been exclusionary in nature. That is, the discussion, description, and evaluation of quality have been limited to a small number of stakeholders. Thus the challenge is to develop a new paradigm for defining quality based on the participation of a wide range of stakeholders that recognises of diversity of values, beliefs, and interests underpinning definitions. These researchers refer to this new approach as the 'inclusionary paradigm'. (p. 173). Woodhead (1996, 1999b) echoes their sentiments and argues that in order for quality indicators to be effective, to allow for a balance between individual needs and the socio-cultural dimension of development, they need to be sensitive to context. It is also important to be sensitive to the fact that in working with the idea of quality indicators there is an inherent danger of limiting consideration to 'checklist' quality, which is often too narrow and restrictive.

3.3.2 Elements of quality:

Williams (1995) suggests that indicators of quality can be divided into three categories.

- *Input indicators:* these refer to the concrete features (i.e., structural characteristics) of early childhood settings, are the most easily defined and, as such, lend

themselves to regulation. They include: the building and surroundings; the materials and equipment; staffing features such as qualifications, adult:child ratios, and group size.

- *Process indicators:* these indicators reflect the day-to-day happenings within a setting. These are more difficult to define and standardize. They include the style of practice; the day-to-day experiences of the children; the pedagogical approach; the approach to management; communication styles and relationships.
- *Outcome indicators:* these refer to the impact of the programme in terms of differentially defined effectiveness. Such indicators include children's health, abilities and their adjustment to school and family attitudes.

The distinction between input/structure [*static*] and process [*dynamic*] elements of quality is well articulated and discussed in early education literature (Bowman et al., 200; Cryer et al., 1999; Dahlberg et al., 1999; Podmore & Meade, 2000). However, Williams (1995) has argued that while measurement of the static elements of quality (e.g. structural characteristics) is characterized by objectivity and rigor, measurement of the process elements is characterized by an intuitive, subjective approach. Historically, in the West, quality has – for regulatory purposes in particular – been measured primarily in terms of structural variables. These easily measured variables include such elements as adult:child ratio, group size, teacher experience, teacher training and space. But these present a limited picture of quality. It is not be possible to evaluate process elements of quality in the same quantitative way that one can evaluate static elements. Process quality is about the dynamics of a settings, about how children relate to children; how they relate to adults; how adults relate to children and to each other. There are instruments designed which attempt to measure both static and process variables of quality; they include the Revised Early Childhood Environmental Rating Scales [ECERS(R)] (Harmes, Clifford & Cryer, 1998).

While quality early education is an idea few would have difficulty supporting, the concept of quality itself is complex. Without careful attention to the sophistication of the quality mix the idea may, in fact, constrain and inhibit positive developments in early education provision and practice (Hayes, 2002). In criticising a mechanistic approach to defining and assessing quality in early childhood education some authors note that the difficulty arises because the quality discourse in early education owes so much to the influence of developmental psychology (Cannella, 1998; Dahlberg et al., 1999; Moss & Pence, 1994)

which has created an image of the universal child with universal stages of development thus reducing attention to the complex social participatory element of early education. Dahlberg et al. (1999) consider the emphasis on development psychology in quality research a modernist search for order with too much emphasis on the measurable elements of quality and insufficient attention to the socio-cultural contexts within which quality rests.

In spite of the debate in the field about the definition and measurement of quality, there is general consensus among early childhood professionals regarding the types of quality indicators that are useful and desirable. The environment should be well organized and stimulating, with responsive and well-trained staff, a balanced curriculum and small group sizes with generous adult:child ratios (Clarke-Stewart, 1991). The National Research Council review (Bowman et al., 2001), having carried out an extensive review of research, located the responsibility for quality firmly with the adults. They identified the key features of quality early education as teachers with a high level of appropriate training; teachers giving specific attention to individual children; teachers with fewer children in their care and teachers using strategies, which would be considered developmentally appropriate.

Research suggests that quality early educational environments should provide opportunities for children to carry out learning activities without undue interference but with assistance when necessary. Enabling environments would provide opportunities for children to engage in activities that build on existing skills and competencies, encouraging the expansion of these skills to new and more complex tasks and supporting children in a view of themselves as competent learners. This latter point is particularly important in motivating children towards self-regulation (Bronson, 2001).

3.3.3 *Summary:*

Defining quality and identifying quality indicators in early childhood education, both structural and process, is a complex undertaking and is a task that must evolve with due regard to the context of early education (Woodhead, 1996, 1999a). For different interested parties or stakeholders quality means different things. Nevertheless, practitioners and policymakers are faced with the challenge of providing effective early education based on their current understanding of quality and in light of existing standards (French, 2003).

This understanding must be informed by the most up-to-date data in respect to how young children develop and learn and the role of the environment in that development.

3.4 Development, Learning and Early Education:

Over the last three decades there has been growing attention to the relationship between education and development (Meadows, 1993; Siegel, 1988; Siegler, 1996; Sigel, 1993) and research data from a variety of disciplines has supported the theoretical position that '*human learning ..... is participatory, proactive, communal, collaborative, and given over to constructing meanings rather than receiving them*' (Bruner, 1996, p. 84). Learning to make sense of the world dominates early childhood education and characterises it as different from other levels of education. Even from very early on the role of interactions to facilitating the 'meaning-making' process has been recognised (Dunn, 1987; Trevarthen, 1992; Rogoff, 1990; Wells, 1987). The child is learning to make sense of the world but also learns by making sense of the world. Adults play an important role in assisting children as this occurs and in directing their curiosity and questions in the way that is most appropriate to the context. *'As a teacher, you do not wait for readiness to happen; you foster or 'scaffold' it by deepening the child's powers at the stage where you find him or her now'* (Bruner, 1996, p. 120). In placing fostering and scaffolding as central to effective teaching Bruner is acknowledging the nurturing role of the adult in early education. This recognition of the active and social nature of early learning is key to refocusing attention on to the relationships within early education. However, while early educational research has provided data on what elements of settings and practice are most effective in terms of child outcome measures within early educational practice and provision, it does not provide answers as to why such elements are effective. The question remains: in what way does the more interactive, activity-based environment positively impact on child development when compared to other approaches and how does this happen?

To gain insight into this question it is necessary to look at research from other disciplines such as developmental psychology. In parallel to the research in the early education field focusing on settings, programmes/curricula, beliefs, practice and outcomes there has been an expansion in child development research yielding a great deal of data which can inform and be informed by early educational research at both an academic and practice level. Overlap between the disciplines has the potential to be advantageous to both levels through offering a sound psychological basis from which educational practice, curriculum

development and educational assessment can be developed and evaluated and, through evaluation in practice which can re-inform psychological research.

The dominant position of the Piagetian developmental model in early childhood education has given the impression of a child at a particular fixed stage of development progressing cumulatively through stages (Bloom, 1981; Bruner, 1996; Hayes, 1993, 1996). This dominance has acted as a barrier to considering the curriculum and practice implications of other more nuanced and sophisticated research emerging from within a systems framework which addresses some of the complexities of development and learning in context.

Evans (1992) has suggested that there is a clear schism in developmental psychology whereby theories of development can be characterised as those that argue that it occurs as a result of naturalistic, indigenous growth, which is 'context-free' or as a result of 'environmental determination' which is 'context-sensitive'. Evans suggests that those educators who subscribe to a 'context-free' view accept the dominance of the universalist approach to child development, particularly the age and stage perspective, and will work on the basis that their approach applies to all children and individual differences are seen as having a minor role. By contrast those practitioners who subscribe to the power of impact of the environment on development, a 'context-sensitive' view, will argue for the management of that environment by adults for the achievement of specific outcomes. This management can be achieved by careful analysis of the learning situation. A contemporary view of development presents a more complex and dynamic scenario lacking the clear and simple distinction between the poles as proposed by Evans. Studies designed to capture the subtle dynamic patterns of teaching and learning in the early years have described development as a process which is context-sensitive and influenced by the capabilities and past experiences of all those involved.

Stetsenko and Arievitch (2002) suggest that many traditional theories still infer that children lack the ability to reason in a reflective way with abstract categories. Given this view, and their own past experiences, many educators think that children need to be taught in a fashion that best accommodates this allegedly fixed age-related feature of their minds. Thus, traditional instruction typically includes the requirement to teach young children in a step-by-step fashion by presenting small bits of information supported by concrete illustrative examples. There is no requirement to reveal the general rules and connections that lie behind these examples or to provide the opportunity to children to discover and

consider them. Children are not given the opportunity to develop and refine the ability to operate with abstract concepts and so appear unable to do so. Bruer (1993) argues that young children need to acquire, not only rules and facts (declarative knowledge) but also knowledge of the procedures associated with how and where to apply such knowledge (procedural knowledge). This latter focus empowers children with methods of constructing new knowledge. It also suggests a dynamic and interactive context for learning.

3.4.1. *Reconceptualising development as learning:*

Early education researchers and practitioners must consider the mechanism of development and learning if they are to understand why certain practices are more successful than others. This is particularly important where investments are made to support early education as an intervention to counteract educational disadvantage. As already noted in Chapter 2 of this study the direction of the relationship between learning and development is one that is often used to distinguish one major theoretical view of development from another. In *Scaffolding Children's Learning* (1995) Berk and Winsler have identified three different perspectives (p. 100-101).

The first perspective is that learning and development are separate entities. In this view development is the dominant process and learning refines and improves on structures already emerged. The individual child is the active agent in this 'natural' development. The 20th century theory driving this view is that of Piaget. Berk and Winsler (1995) and others (Tudge & Rogoff, 1987) are critical of Piaget's view of development as, they argue, it does not take due account of the social and contextual features of the learning process. Brown (1997) refutes this and points out that Piaget did not consider it possible to isolate the biological from the social rather 'he considered individual and social factors to be inextricably intertwined ... he believed that development ... is simultaneously individual and social' (p. 60/61). In his theory of cognitive development Piaget (1932/1983) identified four main driving forces behind development. These were equilibration, maturation, individual experience and social influences. He did, however, limit the influence of the social by arguing that the child must have the relevant cognitive structures already developed to be able to profit from social experiences. Within education he saw teachers not as instructing children but as providing opportunities for them to discover knowledge for themselves. '*Teachers, of course, can guide them [children] by providing appropriate materials, but the essential thing is that in order for the child to understand something, he must construct it himself, he must reinvent it*' (Piaget, 1971, p.1). This rather

strong statement about the individual nature of learning and the role of the teacher has been criticised as underestimating the importance of the social and the interpersonal in learning (Cullen, 2001; Rogoff, 1990, 1998; Pellegrini & Bjorklund, 1998; Wood, 1988) and as downgrading the role of the teacher (Berk and Winsler, 1995; Donaldson, 1978; McGough, 2002).

The second perspective proposed is that learning and development are identical; development results entirely from learning. In this view the social environment provides the inputs necessary for learning and the passive child absorbs these inputs. Development is directed and driven by the environment, giving the manager of the environment, in educational settings the teacher, a great deal of power and responsibility for the outcome. Such a view reflects the behaviourist, or learning theorist, position.

The final perspective proposed by Berk and Winsler is that learning leads development, that is, learning plays a 'leading' role in development. It is a view that emerged from the work of Vygotsky who wrote (1978) that *'human learning presupposes a specific social nature and a process by which children grow into the intellectual life of those around them. ... learning which is oriented towards developmental levels that have already been reached is ineffective ... the only 'good learning' is that which is in advance of development ... developmental processes do not coincide with learning processes. Rather, the developmental process lags behind the learning process; this sequence then results in zones of proximal development'* (p. 89/90). From this perspective both the child and the socio-cultural environment interact to produce development. This interpretation of Vygotsky has been criticised as a misrepresentation by Lambert and Clyde (2000). In their revisiting of Vygotsky they argue that misunderstandings have arisen as a result of incomplete or erroneous translations of his original work. They point out that from their reading of Vygotsky he never made the assertion that learning leads development. The term he used, they believe, was closer to 'instruction', which *'has a totally different meaning, one that completely opposes the educational principles upon which early education is based'* (p. 55).

Lambert and Clyde go on to make an important general point when they caution that translations of Vygotsky have been subtly revised to seem consonant with contemporary beliefs about early education, a point also made by Gillen (2000). While these cautioning analyses are valid and important they tend to refer to specific aspects of interpretation in

translation. The fact is that Vygotsky's theory, and the research and debate it has generated in education, has had an enormous influence on early education, an aspect of education on which he himself wrote very little. It was through his research and writing that researchers began to pay attention to the impact of socio cultural context on development and to the concept of zones of development. Later authors, in both psychology and early education, have taken his work, applied it and extended its relevance to our current understanding of socio-cultural influences (Bruner, 1996; Cole et al., 1978; Valsiner, 1997a), the development of young children (Tudge, 1992) and early education (Berk and Winsler, 1995; Lambert & Clyde, 2000). There are limitations to translation, which have led to subsequent misunderstandings, overextensions and misinterpretations. Nonetheless, Vygotsky's fundamental theory, developing as he would have anticipated, to take account of new contexts and contribute to the construction of new knowledge remains hugely influential and relevant to our understanding of the role of educators in the development and learning of children.

Despite the apparent clarity with which Berk and Winsler (1995) have presented the relationship between learning and development, there are authors who hold that such distinctions do not do justice to either the theorists implicated or to the complexity of processes under review. Contemporary theorists continue to seek explanations for development and learning in terms which reflect the social nature of the individual, as proposed by Dewey and recognised, to a greater or lesser extent, by both Piaget and Vygotsky, and the powerful influence of the socio-cultural context within which learning and development occurs. This presents a fourth perspective that Berk and Winsler have not considered: that is to characterise development as learning, where the terms can be used interchangeably. Unlike the learning theorist perspective, which reduces development to learning as a measurable change in behaviour, this approach recognises that learning processes are as complex and dynamic as developmental processes. Rogoff (1997) subscribes to this view, which is supported by the socio-cultural theories that are emerging from discourse across disciplines. She points out that such theories stress the importance of the concept of *activity* to the analysis of development and refers to the work of Dewey, (1916/1944), Lave & Wenger (1991), Rogoff, (1990) Vygotsky, (1978) Wertsch, (1991) who have all emphasised the role of participation in both face-to-face interactions and in indirect interpersonal arrangements of cultural activities.

This approach to development and learning, where the concepts are seen as interchangeable is appealing because it offers a psychological perspective on development and learning which rests comfortably with the Deweyan approach to educational practice and his emphasis on the active participation of a social learner in the learning process. Rogoff (1990) and others (Lave & Wenger, 1991) have used the notion of the active participation of the learner to extend our understanding of learning and development.

Unlike earlier psychological research, aimed at imposing 'scientific' models of explanation on cognitive activity Bruner (1996) argues that contemporary research '*explores the child's own framework to understand better how he comes to the views that finally prove most useful ... such research provides the teacher with a far deeper and less condescending sense of what she will encounter in the teaching and learning situation'* (p. 58/59). This focus on the importance of active participation of the child in context resonates with parallel developments with respect to children's rights and children's visibility in the learning process in general. It challenges educators and policy makers to consider what it means to facilitate such active participation, particularly in early education. Furthermore, it is important to realise that children cannot construct meaning through participation alone; there must be some appeal to concepts, some richness in content.

3.4.2 Towards a 'satisfactory' theory of development:

In a review of theories of development Kuhn (1992) finds many of them weak or incomplete. She maintains that the traditional view of development, which sees it as a cumulative process in which each new behaviour unit is acquired independently through operation of the same basic mechanism of shaping by the environment, is too simplistic to capture the complexity of the processes under study and considers that most theories have underestimated the biological, the social and/or the dynamic nature of development (p.263). She rejects the recent hypothesis of psychological development as a biologically governed, quantitatively increasing processing capacity because, she argues, it fails to explain how and why cognition develops or to appreciate the influences of external variables on the developmental process and accepted as mediated by characteristics particular to the individual.

Kuhn (1997) argues that the value of the constructivist approach is that it captures the complexity of the developmental process and identifies it as a bidirectional interaction between individual and environment, which leads to a series of major qualitative

reorganisations in the cognitive system as a whole. These reorganisations are, in turn, reflected in the progress of the individual's meaning making competences. The notion of bidirectional interactions challenges adults to consider their role as learners in the process of education. But how exactly do bidirectional, transformative interactions impact on the development? This has been a concern of Bronfenbrenner and his colleagues for many years (1979, 1989, 1994, 1998).

Of particular relevance is the attention within the bio-ecological model to the interacting elements of the person, the process, the context and time (PPCT). Central to this model is the construct of process. The identified key processes driving development are of progressively more complex reciprocal interactions, proximal processes, between the active, and evolving bio-psychological human being and the persons, objects and symbols in its immediate external environment. To be effective, the interactions must occur on a fairly regular basis over extended periods of time. This view of the developmental process strengthens the call for increased attention in early education to the role of interactions and activity in early learning.

Kuhn (1992) proposes a number of key features that a 'satisfactory' theory of development would contain. It would:

(i) Refer to mental processes

(ii) Characterise development as a gradual coordination of the individual and the environment

(iii) Address the importance of context

(iv) Account for context specificity and

(v) Identify a mechanism for development.

Mapping these key features on to the bio-ecological model of development (Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Morris, 1998), the underpinning theoretical framework for the work presented in this study, indicates that this model of development meets the criteria of a good theory[2]. Kuhn's first criterion for a satisfactory theory of development is that it would need to refer to mental processes that take place within the organism, including those aspects of such processes referred to as reflective, or

[2] In reading the varied use – often interchangeably – of the terms 'theory' and 'model' has been noted to describe development. Bronfenbrenner uses both terms to describe his bio-ecological perspective on development.

metacognitive. Under the heading of personal characteristics Bronfenbrenner identifies three characteristics that are central to development. They are (i) the dispositions of the person which can set proximal processes in motion in a particular developmental domain and continue to sustain their operation, (ii) the bio-ecological resources of ability, experience, knowledge and skill required for the effective functioning of proximal processes at a given stage of development (iii) the demand characteristics that invite or discourage reactions from the social environment of a kind that can foster or disrupt the operation of proximal processes.

Secondly, Kuhn proposes that such a theory would characterise development as a gradual coordination of individual mind and external physical and social reality, in which neither internal nor external forces predominate over the other. Even from the earliest iteration of his model in 1979, and deriving from the work of Lewin, Bronfenbrenner has been sensitive to this balance of interactions. Indeed in reviewing his original thesis (Bronfenbrenner, 1989) he criticises himself for his inattention to the contributing role of the person in the model of development proposed and goes on to reconsider his work to correct this.

Bronfenbrenner's consideration of nested layers of contexts moving from the individual in a microsystem out towards, but influenced by, the exo- and macrosystems within the context of a chronosystem meets Kuhn's third and fourth criteria that a good theory would address the social contexts in which development occurs and the ways in which those contexts relate to individual development.

Finally, Kuhn suggests that a satisfactory theory of development must specify mechanisms by means of which developmental change occurs. This is, in fact, one of the most difficult of the features to achieve. In his work Bronfenbrenner considers this and proposes that the bio-ecological model has process at its core as the key mechanism driving development. '*More specifically, this construct [of process] encompasses particular forms of interaction between organism and environment, called proximal processes that operate over time and are posited as the primary mechanisms producing human development. The power of these processes to influence development is presumed to vary as a function of characteristics of the Person, of immediate and remote environmental Contexts and the Time periods in which the proximal processes take place*' (1998, p. 995). This has

important implications for our understanding of those features of early education important to the development, the learning, of young children.

3.4.3. Development and learning in early education:

In writing on the topic of development in early education, Katz & Chard (1994) do not separate out learning from development for consideration but rather introduce the reader to two aspects of development which they consider as important. They point out that, traditionally, early childhood education has drawn heavily on studies of human development with child study and child development being the key academic specialities of influence. Development is, they contend, most usefully considered as having two major dimensions, the normative and the dynamic.

Like other authors Katz and Chard note that consideration of the normative dimension has been a particularly dominant influence in early education in both curriculum development and recommendations for practice. It can also be observed in its application in classrooms where the stage of development of the child can be seen to follow a prescribed pattern – which in young children is to miss the point that they develop in a far messier and entangled way than the proposed linearity. The normative dimension of development addresses the question of what most children can and cannot do at a given age or stage and owes much to the work of Gesell in child study and Piaget in studies of cognitive development. *'When we say that an activity is developmentally appropriate, speak of grade level achievement or apply a Gesell-type developmental measure, we are employing the normative dimension of the concept of development'* (Katz and Chard, 1994, p.18).

They argue that it is a weakness in early educational literature and debate that less attention is given to the dynamic dimension of development. They contend that it is the dynamic dimension which matters most when considering the development of young children. They identify three particularly useful factors deriving from the dynamic dimension of development: the way human beings change over time and with experience; the concept of delayed impact (Radke-Yarrow, 1987) and the long-term cumulative effect of repeated or frequent experiences.

They also contend that sensitivity to both the normative and dynamic dimensions of development is critical in early education. The distinction between what young children can do and what they should do is especially serious in the early years because most

children appear willing, if not eager, to do what is asked of them. This is a central issue of debate when considering curriculum and practice in the early years and one that has been recognised by a number of authors (Bloom, 1981; Bruce, 1987; Bruner, 1996: Elkind, 1988; Gardner, 1991).

Pellegrini & Bjorklund (1998) also identify two different approaches to considering development, and caution that when using the term 'development' one needs to be aware of which approach is meant. The first, and most widespread, model is that which characterises the child as an unfinished or incomplete adult and is best represented by the theories of both Piaget and Vygotsky. It is similar to the normative dimension discussed by Katz and Chard. The implication of this approach is that development proceeds along a specified path. Such a view has specific educational implications, which have influenced various educationalists, whether coming from a Piagetian, Vygotskian or combined perspective (Athey, 1990; Hohman and Weikart, 1995; Shayer and Adey, 2002). In the US the influential early educational publication on Developmentally Appropriate Practice [DAP] (Bredekamp, 1987; Bredekamp and Copple, 1997) documents materials and activities which are identified as either 'appropriate' or 'inappropriate' for children at different ages and stages of their lives. The description (or as some see it, prescription) of 'appropriate' here is closely tied to the contribution these materials and activities make to the development of the child towards operational thinking and is based on the notion of development as a continuous progress toward adulthood. This view has generated a great deal of debate in early education literature, including an ongoing colloquium (Hatch, Bowman, Jor'dan, Morgan, Hart, Diaz Soto, Lubeck & Hyson, 2002) and informed an active research base on the topic of curriculum and practice (Canella, 1998; Dahlberg et al., 1999; Lambert & Clyde, 2000; Lubeck, 1996).

The second model of development identified by Pellegrini and Bjorklund (1998) is that which views each developmental period as being valuable for that specific time. In this model 'childish' behaviours are seen as adaptive to the period and not regarded as imperfect but rather as important responses to the 'niche' of childhood. '*The idea that a behaviour, such as play, has immediate rather than deferred benefits is consistent with the view that development is an adaptation to the specific demands of a niche, such as childhood. The important point to stress here is that behaviour may serve different functions at different periods of development*' (p. 17). Different behaviours may serve present and future functions at one and the same time. In some cases there is continuity of

similar behaviours over time which they refer to as *homotypic continuity*. There are many examples and they instance the observations of a physically active infant also recorded as active during their preschool years. *Heterotypic continuity*, on the other hand, is more difficult to track. It refers to a developmental link across time between two dissimilar behaviours. They give as an example the ability to engage in make-believe play at age 3 years related to word reading at age five. They contend that make-believe play and word reading involve different response modes but are theoretically related to the extent that they both involve manipulation of symbolic representation. The essence of 'being developmental' for Pellegrini and Bjorklund is discovering qualitative change, via transformation, across the lifetime. This poses a challenge to researchers to design studies capable of identifying and tracking (or tracking and identifying) such changes and offers a challenge to practitioners to value the moment for its immediate developmental contribution whilst acknowledging (but not overemphasising) its potential in respect of later development. The authors locate the basis for this model in the work of Bateson (1978) and Kagan (1980).

If one considers that development is a continuous process, then disturbances in the early processes will be seen to have a special significance with important, and sometimes irreversible, effects. Viewing development as a dynamic and discontinuous process, or as the 'to-ing and fro-ing' process proposed by Lambert and Clyde (2000) allows one to view behaviour and development in early childhood as adaptive to the demands of the niche of childhood. Such a perspective to development and context provides an alternative view of 'appropriate' to that proposed by Bredekamp & Copple (1997). Pellegrini and Bjorklund argue that appropriate should be seen to refers to the role of individuals, materials and activities in meeting the immediate and particular needs of childhood rather than as a preparation for the next stage of development or for adulthood. *'This view suggests that individual children may take many different pathways to developmental competence in different periods'* (p. 12). This view of developmentally appropriate is compatible with that discussed by both Dahlberg and Penn, who are critical of the dominance of the DAP perspective in debates within early education. They propose an approach to early education which is not tied to the age and stage of development of the child but rather linked in to the socio-cultural context of development for the child in the present. Such an approach, they argue, is exemplified by the practices at Reggio Emila in Italy and in the Te Whariki early years curriculum of New Zealand where pedagogy is directed by the connections, interactions and relationships between children and the wider world, social, physical and

emotional, rather than by prescribed expectations of developmental outcome (New Zealand, 1996; Edwards, Gandini & Forman, 1995.)

3.5 The Role of Interactions in Development:

Bruner (1996) suggests that if pedagogy is to empower humans to go beyond their potential it must transmit the tools [including the symbolic tools but not only the symbolic tools] appropriate to the society. These tools include empowering children to explore their own way of thinking and problem-solving. To assist this Bruner stresses the importance of intense interactions in language rich environments. Such interactions are similar to the proximal processes proposed by Bronfenbrenner and his colleagues as the basis from which to consider the question of why interactions are so important to development.

It is beyond the scope of this study to review the extensive data emerging from neuropsychological, brain and psychological research, which support the importance of interactions to development. However, authors such as Aubrey et al (2000), Greenfield (2000) and Shore (1997) give useful reviews of research findings from various perspectives and theoretical stances which underpin the critical importance of early interactions to the development and learning of young children. Development is a process of continuous change that is self-maintaining, self-restoring and self-regulating (Bronfenbrenner and Ceci, 1994; Bronfenbrenner & Morris, 1998; Bronson, 2001; Gaussen, 2002; Kuhn, 1997). Early brain research indicates that the brain is only partially mature at birth and continues to develop over the first years of life (Karmiloff-Smith, 1992; Shore, 1997). This makes it immediately susceptible to the ongoing influence of experiences of all types. Changes in development result from reciprocal transactions of the biologically maturing child with the social, physical and cultural environment (Bronfenbrenner, 1995, Sameroff & Fiese, 1990) and the quality of interactions impacts on development (Trevarthen, 1992). Culture is an organising influence in development (Bruner, 1996; Cole, 1996; Vygotsky, 1978) and the learning context is important. Studies indicate that 'meaning-making' activity is enhanced by quality interactions. Results from observation of infant-caretaker interactions highlights the importance of joint attention to objects and events in assisting infants to come to attend to objects and recognise meaning-making and intention on the part of the other (Dunn, 1987). Such data suggests that the co-construction of knowledge does not simply involve a cumulative effect of multiple individual contributions, but represents a stronger view of learning and the importance of the act of interacting, of shared meanings growing out of participation in shared activity.

While research in neuroscience is providing exciting data about early brain development and the importance of interactions with people and objects there is, as yet, no clear link between results from such research and implications for teaching and learning in practice. However, a review of such research by Blakemore (2000) and Blakemore and Frith (2000) did conclude that '*there is no biological necessity to rush and put the start of teaching earlier and earlier. Rather, late starts might be reconsidered as perfectly in tune with findings from ... brain research*' (p. 4)

In addition to research studies investigating how interactions impact on development there is research, from a variety of disciplines, providing us with rich and powerful evidence about why they are important to how children learn; the nature of learning and the ways in which early experiences shape the patterns of progress, achievement and fulfilment, throughout an individual's life. This research highlights the importance of developing learning dispositions (Katz, 1995; Perkins et al. 1993; Carr, 1999, 2000, 2001a, 2001b, 2002; Lambert & Clyde, 2000); encouraging a mastery, or learning, orientation (Ames, 1992; Dweck & Leggett, 1989; Heyman, G, Dweck, C. S. and Cain, K. 1992); promoting metacognitive skills (Kuhn, 1995, 1997, 1999; Shayer & Adey, 2002); developing cognitive and social self-regulation (Bronson, 2001); providing for multiple intelligences (Gardner, 1991, 1993); and fostering engaged involvement and emotional well-being (Goleman, 1996; Laevers, 1994, 2002). The picture emerging is one of quality early education settings as dynamic environments rich in interactions and communication where learning and development occurs in a complex, dynamic and shared context and not simply as a result of individual differences in ability or a specific pedagogy. This is a view that tends more to the Socratic view of learning – inductive dialogue with bidirectional interactions – than the Platonic view where the teacher is the expert instructor and planner.

The move from considering education as a process of transmission towards one of construction has been well argued and in most western early educational literature one sees acknowledgement of the need to consider both the individual and the sociocultural context when evaluating learning. However, the debate has moved beyond this again towards the notion, articulated by Rogoff (1990. 1997), Kuhn (1992, 1995) and others, of education as dynamic transformation. Interactions are seen as the locus and carriers of learning, mediating mechanisms for development (Packer, 1993). The mechanisms to allow this conceptualisation have begun to emerge from certain areas of child development research.

3.5.1 The Zone of Proximal Development and scaffolding:

Vygotsky (1978) is credited with describing an accessible mechanism for considering the role of interactions as a pedagogical tool. The mechanism proposed was that of the Zone of Proximal Development (ZPD). In his writings on educational implications he defines the ZPD as *'the distance between the child's actual level of development as a measure of their independent behaviour and his or her potential development level in a social context with adult or peer guidance or collaboration....the ZPD defines those functions that have not yet matured but are in the process of maturation, functions that will mature tomorrow but are currently in an embryonic state'* (p.86). The emphasis is on the learner as a maturing organism who is passive in the role of development but who can be guided to the next developmental stage by the informed adult. Vygotsky argued that the ZPD furnishes psychologists and educators with a mechanism for cultivating higher order cognitive functions, a tool through which the internal course of development can be understood. *'By using this method we can take account of not only the cycles and maturation processes that have already been completed but also those processes that are currently in a state of formation'* (p.87).

The Vygotskian view of learning, including the concept of the ZPD, has been widely embraced by the early education field (Berk & Winsler, 1995; Aubrey et al., 2000). As the concept of ZPD has become more widely used in early education it has not always been accurately understood (Lambert & Clyde, 2000; Valsiner, 1997a). The instructional and uni-directionality of the original definition has become blurred. In her article on science education in the early years, for instance, Nicholls (1998) describes a dynamic learning environment where teachers and pupils are considered partners in the teaching and learning situation and encourages the use of the ZPD as a context for teaching. Through this mechanism teachers, as facilitators of knowledge construction, can cultivate children's ability to talk about, record and communicate events and ideas. She cautions that using this approach does require a commitment to providing for real, rather than ritual, communication with, and between, children with opportunities for dialogue and discussion. Her characterisation of ZPD in this context is more dynamic, with a more active role for the child, than that envisaged by Vygotsky.

A metaphor widely used in the literature to describe effective teaching/learning interactions is that of scaffolding. Scaffolding is a term often used as synonymous with the Vygotskian concept of ZPD, although the two concepts developed independently of each

other. Wood, Bruner & Ross (1976) introduced the idea of adults scaffolding learning to both structure and extend children's activities and learning. Although they did not draw explicitly on the work of Vygotsky and his construct of ZPD when formulating their construct of scaffolding there are clear parallels between the two constructs and they are often used interchangeably. The scaffolding metaphor captures the Piagetian notion of the child as a constructor of knowledge and the construction is supported, or scaffolded, by the social environment within which such construction is occurring. Generally the adult is considered as the scaffold to the child's development. Bruner, (1996) has identified the goals of adult-child scaffolding as joint problem-solving, intersubjectivity, warmth/responsiveness and promoting self-regulation. Similarly Berk and Winsler (1995) observe that '*scaffolding connotes a warm, pleasant collaboration between a teacher and a learner while the two are engaged in joint problem-solving activity. During this collaboration the adult supports the child's autonomy by providing sensitive and contingent assistance, facilitating children's representational and strategic thinking and prompting children to take over responsibility for the task as their skill increases*' (p. 31/32). This image, though suggestive of supportive interaction, continues to emphasise the adult-to-child nature of scaffolding and is reminiscent of the approach implied in the original proposals on ZPD. Such a description of scaffolding, in keeping with many others is in danger of reducing the child to the role of a recipient of an adult's didactic efforts while maintaining the notion of an active child by reference to the construction of knowledge in the response of the child to the teacher.

Both ZPD and scaffolding have been criticised as presenting too passive a view of the child and too instructional a role for the expert. The direction of the interactions, from the adult/expert to the novice/learner, is considered uni-directional and insufficiently sensitive to the important role of the process of the interaction itself within the scaffold metaphor or the ZPD space. Cullen (2001) notes that the argument that early studies of ZPD and scaffolding located the learner as passive began to be addressed in the work of Rogoff (1990), (Rogoff, Mosier, Mistry & Goncu, 1993) and Valsiner, (1988, 1997a) who both moved from the cognitive constructivist idea of Piagetian scholars and the social constructivist idea of Vygotskian scholars to a view of co-construction of knowledge where the concept of 'intersubjectivity' and joint activity becomes central.

An early indication of the trend to move beyond Piaget and Vygotsky is apparent in an article by Hatano (1993) titled '*Commentary: Time to Merge the Vygotskyian and*

Constructivist Conceptions of Knowledge Acquisition'. The title itself is interesting in that it continues to identify learning as 'acquisition' at a time when other researchers such as Kuhn (1992) and Rogoff (1990) were moving away from this approach, while using the same theoretical models, and proposing a more transformational approach to participation in learning (Smith, Dockrell & Tomlinson, 1997). Hatano's commentary is important in that it extends consideration of Vygotsky away from the ZPD as specific to tutoring towards a wider understanding of the powerful nature of his sociocultural theory. Educators are encouraged to consider the interpersonal aspects of the mechanism and the dynamics of the interplay between the different contexts, including the classroom context, in their teaching. This attention to the interpersonal dimension, particularly in early education, has been discussed by Stone (1993) who identified it as a missing element in the Vygotskian concept of ZPD.

3.5.2 *Limitations of the Zone of Proximal Development and scaffolding:*

Sylva (1997b) has argued that educators often want simple solutions to resolve complex problems and when these simple solutions do not work they abandon them. She suggests that teachers wanted and found a slogan in the notion of scaffolding but too simplistic an interpretation of the power of scaffolding led to its failure in the reality of current class sizes and curricular demands. Teachers were rightly disappointed in its usefulness and a review of research indicates that scaffolding either does not exist or does not work in classrooms. She cites the work of Bliss, Askew & McRae (1996) to support her. These authors found evidence of what they called 'pseudo-scaffolding' or 'mis-fired scaffolding' in a sample of London schools. They found no evidence of successful scaffolding. Sylva argues that scaffolding is a concept of limited value and where it is successfully used in classrooms it is in a one-to-one, tutorial type situation (Wood & Wood, 1996; Hobsbaum, Peters & Sylva (1996). However, the research she has reviewed relates to scaffolding in primary school classrooms and not to early education settings where Sylva herself has argued it has a valuable role to play in pedagogy (1997b).

The uncritical acceptance of the scaffolding metaphor in early education discussion and practice has been criticised by Lambert and Clyde (2000). They acknowledge the potential of scaffolding as a concept but make a case for reconsidering it from the contextualised perspective specific to early education rather than '*passively accepting interpretations from within the discipline of psychology, or other domains of knowledge, that may not be contextualised to the needs of younger children*' (p. 59).

Contemporary authors, including Bruner (1996), have considered the possibility of extending the idea of scaffolding to make it more powerful and effective as a tool in education. More attention needs to be given to the active role of the child in the scaffolding process and to the emotional aspect of relationships between the child and others as, historically, too much attention has been given to the mode of adult-child interchange where the adult engages in explicitly didactic instruction reducing the child to a passive recipient. This could be done through, for instance, allowing for the child to be viewed as the 'experienced other'. Bickhard (1992) contends that the usual conception of scaffolding is limited in that it is seen as providing what the child lacks in order to make possible performance that might otherwise not emerge. He proposes an extension of the original notion of scaffolding to include different types of scaffolding at different levels of influence, including child-child scaffolding. His refinement of the mechanism is intended to extend the power of scaffolding in learning and his suggestion that the locus of development is the system engaged in the interactions of scaffolding itself does give it a potentially powerful role. Through scaffolding, his argument goes, the child not only accomplishes something he or she might not have otherwise accomplished (a process he calls recursive variation) but is also supported – by the process - to develop 'enabling' competencies (which he calls meta-recursive variations) which may be related to procedures or strategies other than the content of the scaffolded experience. Thus, through scaffolding the child develops content knowledge and skills but also procedural knowledge, which assist in the development towards self-regulating scaffolding and the construction of new knowledge. In addition to extending the view of the process of scaffolding he also sees potential for different forms of scaffolding including the 'institutional scaffolding' provided by schools, youth clubs and sporting groups and 'environmental scaffolding' located in the learning environment, including expectations, values and beliefs. Interesting, work on peer collaboration within the scaffolding framework at secondary school has been reported by Shayer and his colleagues (2002).

Of particular interest to early education is Bickhard's notion of self-scaffolding towards which, he argues, the young child is developing. This idea is also addressed by Meadows (1993) in relation to the development of self-regulation and extended by Lambert and Clyde (2000) who suggest curricular and pedagogical implications for early education. They argue that the current view of scaffolding in early education should be set against the theoretical framework of contextualised psychology where development and learning are

recognised as a complex dynamic process which is multi-directional and influenced by socio-cultural contexts (Cole, 1996; Rogoff, 1990; Kuhn, 1995, 1999; Winegar & Valsiner, 1992). To capture this most dynamic concept they propose the notion of 'reciprocal scaffolding' as more in line with current thinking about young children's learning. They define reciprocal scaffolding as the situational scaffolding used to co-construct higher levels of understanding or ability with a learner. An ultimate aim of reciprocal scaffolding in early education is development towards degrees of self-scaffolding. Reciprocal scaffolding includes the attachment relationship between the child and adult [emotional aspect], the physical environment [materials support] and the social ethos [social supports] (2000, p. 59). Even though these authors are sensitive to the dynamic nature of development and the reciprocal nature of the teaching and learning relationship it is interesting to note the absence of reference to peer interaction in their description.

3.5.3 *Summary:*

The importance of relationships and interactions in the process of development has been strengthened by research which has shown the powerful role that the social context plays, even in the lives of very young children. Studies into collaborative learning in context and the importance of 'intersubjectivity' – the ability to 'read other minds' (Bruner, 1996) - have informed a move towards a more respectful pedagogy which sees the child as an active participant in the learning process (David, 1990,1999c). The support for the notion of collective learning derives from a theoretical stance on the social nature of learning and the social construction of meaning. It is based on the belief that activity and participation in shared activities play a key role in development (Rogoff, 1990; Kuhn, 1997). The importance of bidirectional, transformational interactions has been defended in terms of its contribution to facilitating children to explain their ideas to others, negotiate, argue a point and clarify their thinking. Collaborative learning between peers is considered particularly important in early childhood where the collaborative opportunities in a safe environment enhance children's opportunities to refine their cognitive and metacognitive skills (Rogoff, 1998; Cullen, 2001), even if it may not always result in enhanced performance, particularly if the more competent peer lacks confidence (Tudge, 1992). Larkin (2002) asserts that collaboration with peers and adults, as opposed to individual work, is valuable because it results, in practice, in explaining one's thought processes and seeing things from another's viewpoint, learning opportunities that are important in encouraging the development of higher order cognitive functions such as metacognition (p. 67). Cullen (2001) notes the increasing development towards studying the shared basis of learning in peer groups and

'learning communities' (Lave, 1991; Brown, 1994: Salomon, 1993) providing concepts such as socially shared cognition, distributed cognition and situated knowledge which emphasise the collective nature of knowing, consonant with the Deweyan idea of the individual as a social learner even when interacting with objects or concepts.

The concepts of ZPD and scaffolding have provided both teachers and researchers with valuable mechanisms for considering how and why such interactions can influence development and learning. Despite their limitations, identified in both theory and practice, they provide sound bases from which to extend knowledge and improve practice. Providing opportunities for effective interactive learning requires a reform of traditional education and involves careful planning as, historically, primary school settings are not organised to promote or support cooperative or collaborative learning and teachers are rarely trained to promote such learning.

3.6 The Development of Higher Order Functions in Early Education:

The argument then is that including a consideration of interactions in early educational pedagogy is necessary and valid given the role that interactions (their quality, bidirectionality and content) play in facilitating the development of thinking skills (cognitive and metacognitive) and affective skills (disposition); that is their role in developing knowledge and skills, knowledge about knowledge and the inclination and readiness to apply knowledge.

Historically in early education policy and research attention focused on the concept of intelligence, largely due to the use of the IQ as a child outcome measure in evaluation studies. The concept of intelligence is both a political and an academic one (Herrenstein & Murray, 1994; Pinker, 2002). It is a concept that has polarised thinkers and politicians, influenced policy in education in no small degree and continues to generate debate and discussion. It is a psychological construct which is often studied in isolation from the context in which it is expressed and this is at odds with our current understanding of development in general. One of the contemporary debates in the study of cognition is the degree to which there exists a general intellectual skill as opposed to specific skills which may be domain or discipline bound (Glaser, 1984) or context specific (Ceci 1990; Lave and Wenger, 1991). This distinction has been characterised by Dweck and her colleagues as an 'entity' view of intelligence versus an 'incremental' view (Dweck & Bempechat, 1980) and has been found to influence both children and teachers in their approaches to

learning. Theorists like Gardner (1993; 1999) and Sternberg (1985) argue that characterising intelligence as a general capacity is too limiting. They have both put forward alternative, more inclusive theories of intelligence. Gardner has proposed the notion of multiple intelligences and Sternberg suggests that intelligence is best considered as an '*ability to balance the need to adapt, to shape and select environments in order to attain success....within ones socio-cultural context*' (1998, p.438).

Viewing intelligence as predominantly general or predominantly specific may be an unnecessary polarising of perspective. Perkins and Salomon (1989) suggest that it is more productive to consider a range of generality becoming refined into more specialised structures when applied within specific domains. Individuals develop in a social context of other individuals, and the interdependence of cognitive and social processes has been acknowledged and investigated. Recognising the importance of the socio-cultural context to development supports the view that development is not an isolated, individualistic pursuit and that children's participation within a social culture transforms their experiences in powerful ways (Cole, 1996; Rogoff, 1997). In education a more flexible conceptualisation of the process underlying intelligent action would result in consideration of the detail of context as an influencing element in teaching and learning which, although well known since the seminal work of Donaldson (1978) on understanding young children's thinking, appears to have had limited impact. Contemporary studies of development move beyond the individual to consider the interactive nature of development, the role of the individual and the environment as a transactional unit each with the potential to transform the other. The shift in conceptualising intelligence from biological adaptation towards social construction requires some re-definition to include '*not just the cognitive skills and forms of knowledge that have classically been considered the essence of intelligence, but also a cluster of social performances such as asking questions, striving to master new problems and seeking help in problem-solving'* (Resnick & Nelson-Le Gall, 1997 p. 145).

But can young children develop such skills, are they capable of higher order thinking? Various authors, from different perspectives, have argued that abstract thinking is no less common in young children than concrete thinking and have emphasised the role of dialogue in facilitating its manifestation and development (Bruner, 1996; Egan, 1997; Resnick, 1987). This emphasis on dialogue is a central feature of Vygotsky's approach. Egan contends that higher order functions, such as meta-cognition, begin with social

relations, in interactions with others, where the social nature of people comes to be their psychological nature. Such a view recognises the young social child as capable of reasoning, by and while making sense of the world and presents the child as capable of higher order functions such as thinking about thinking, connecting ideas through reflection or 'going meta' (Bruner, 1996. p. 57).

Kuhn (1997) contends that both Piaget's and Vygotsky's work prefigures the current attention to metacognition; '[F]or both of them, to know means to know that you know'(p. 248). Cullen (2001) traces the rise of interest in researching metacogniton to the work of Flavell in the 1970s when he distinguished between the learner's cognitive processes [procedural component], used in the cognitive tasks of recall and information organisation, and the learner's knowledge and understanding of those processes [declarative component] (Flavell, 1979). It has been suggested (Kovac-Cerovic, 1992) that the identification of two elements of meta-cognition, the procedural and the declarative, has created an unnecessary split at both the conceptual and empirical level. Kovac-Cerovic argues that such a distinction has led to the fragmentation of what ought be considered an integrated cognitive process. This point is supported by Meadows (1993) who suggests that it may be more effective to teach strategies and domain-relevant information at the same time, to seek to link procedural and declarative knowledge.

There is some debate about whether or not young children can be considered to have metacognitive skills. Flavell's recent work (1995) shows that whilst age is a determining factor for degree of metacognitive knowledge, young children do have some knowledge of thought processes and becoming metacognitive necessitates an active involvement in the learning process. However, Pellegrini and Bjorklund (1998) note fairly forcefully that one of the more robust research findings over the past twenty-five years has been age differences in children's metacognitive knowledge. '*In general, age-related differences have been found on person, task and strategy variables, with children becoming more aware with age of their own knowledge and how it can be applied. Contemporary researchers stress the bidirectional relationship between cognitive and metacognitive development. Metacognition is obviously an important component in children's cognitive development and certainly influences cognition; but the relationship also works in reverse, with competent cognition influencing metacognition. The two are intimately entwined, and the relationship varies depending on a child's age and the task involved*' (p. 138/139).

They go on to suggest that poor metacognitive skills may actually be adaptive pointing out that young children's optimistic, and often unrealistic, opinions of their own abilities may foster their developing sense of self-efficacy. *'If they knew how poorly they did on most tasks, young children might be discouraged and quit'* (p. 140). This view of the adaptive function of certain 'immature' behaviours having a survival value in the naïve credulity of young children would be characterised as maladaptive in later life.

3.6.1 *Metacognition and Theory of Mind in young children*:

Despite differing views on the topic there does appear to be a case for considering the emergence and function of metacognition in young children. Larkin (2002) argues that the tension surrounding the theoretical concept of metacognition arises from the usual tendency to describe metacognition as late developing, involving highly abstract thought-processing, when researchers have described children as young as four years displaying metacognitive processing. Traditionally metacognition has been associated with adolescence – particularly the Piagetian stage of formal operational thinking - but research into 'theory of mind' has shown the competencies of young children in engaging in metacognitive tasks (Gornik, & Wellman, 1992). There is a vast literature on children's theory of mind since the first publications on the topic in the early 1990s (Astington, Harris & Olson, 1988; Astington, 1993; Wellman, 1990). Studies have endeavoured to assess when and to what extent young children can appreciate that other peoples actions may be motivated by beliefs or desires quite different to their own but the picture is a complicated one. Some authors suggest that children as young as eighteen months have a developing 'theory of mind' (Dunn, 1993) whilst others argue that children as young as 3-year-olds have a limited 'theory-of-mind' (Pellegrini and Bjorklund, 1998) and by the age of four they have a clear ability to understand that two people may have conflicting beliefs about a single event. Precursors to this ability appear to be present by the second year (Keil & Silberstein, 1996).

Perkins et al (1993) note that studies into the evolving conceptual frameworks of the child show that quite early on in their development young children begin to develop a theory of mind. *'The core insight is that, at quite a young age, children come to see themselves as 'things which think'* '(p.15). Research into the processes involved suggests that by the beginning of formal schooling, children have begun to develop many of the key skills which allow them to function as active agents in their own development. Such skills

include the ability to recognise anomalies, to look at things from other points of view, to evaluate reasons and to make judgements.

As with her views on development in general, Kuhn (1999) argues that it is most effective to consider the development of metacognitive processes as evolving and multi-dimensional and not a 'zero-one' phenomenon. She has made the connection between the development of metacognition and the development of what she calls an evaluative epistemology in which the individual recognises that all opinions are not equal and knowing is understood as a process that entails judgement, evaluation and argument. Described in this way, metacognition involves reflection on thinking and requires being able to hold in the mind different variables simultaneously, to think about how one is processing information whilst actually working on a task and then to remember how one worked on a task in order to reflect upon it.

The ability to hold different variables in the mind at different levels of abstraction develops with age: becoming more metacognitive enables the learner to provide for herself the supporting and scaffolding role originally assigned to the adult or peer. Larkin (2002) supports the thesis that there is a link between metacognitive skills and positive overall cognitive functioning and cites a number of studies which have found that: poor readers have poorer metacognitive knowledge (Papetti, Cornoldi, Pettavino, Mazzori & Borkowski, 1992); training students in metacognitive knowledge about memory enhanced memory and also reading comprehension and problem-solving (Lucangeli, Galderisi & Cornoldi, 1994) gifted children have greater metacognitive ability (Schwanenflugel, Stevens & Carr,1997) and higher metacognitive attitude is linked to better transfer of skills and strategies from one domain to another (Borkowski, Ryan, Kurtz & Reid, 1983). Teacher's assumptions about the minds of their learners influence both the kind of pedagogical approach they take and the extent to which they employ metacognitive language, a language for talking about the mind (Astington & Pelletier, 1996). Donnelly (2001) reports that even the youngest children in primary school can enter into dialogue and use elements of higher order thinking and observes that reflective teachers encourage reflection in children. The concept of reciprocal scaffolding, proposed by Lambert & Clyde (2000) for application in early education, may offer a mechanism to teachers for assisting the development of more refined metacognitive skills in young children.

3.6.2 *Self-regulation:*

One of the benefits of developing metacognitive skills is that it assists in the development of cognitive self-regulation. Bronson (2001) argues that one of the tasks of childhood is to develop the ability to regulate cognitive functioning, to exercise conscious control over attention and memory processes. Accumulating research evidence suggests that, to some extent, children spontaneously develop these capacities but it also suggests that the environment can assist or disrupt their development. From a socio-cultural perspective both language and cultural supports are considered critical to the development of the 'higher mental processes' (Vygotsky, 1978). Research is now suggesting that language and a language rich environment can assist young children in the development of their self-regulatory skills (Berk and Winsler, 1995). Bronson, capturing the dynamic to-ing and fro-ing of the developmental process, proposes that learning can lead, as well as follow, cognitive development when adults or more competent peers provide guidance in the form of structuring or 'scaffolding' (p. 119). This view differs from the Piagetian perspective which views cognitive self-regulation as a developing characteristic governed by the equilibration process.

Bronson outlines the development path of both social and cognitive self-regulation, acknowledging that the theoretical explanation for how self-regulation occurs varies depending on one's theoretical viewpoint. She observes, however, that preschool children (3-5 year olds) are learning how to learn and how to solve problems. They are developing strategies for cooperative and positive social interactions. As they develop, their behaviour sheds light on their developing capabilities. Experience in attempting to successfully carry out cognitive tasks is influenced by the environment and the responsiveness of those in the environment. In her concluding comments on the preschool child she notes that '*environments that nurture self-regulation are orderly and consistent enough for children to understand the requirements for successful independent functioning within them. They provide appropriate ground rules for action that allow children to carry out a variety of activities, alone or with peers, without the need for constant adult control. The materials and activities in these environments are also designed to interest and challenge children and to support self-regulated activities*' (p. 220).

Self-regulation also has an affective dimension. Goleman (1996) considers that school success is more dependent on emotional and social measures than on a child's fund of facts or ability to read. It is, he argues, more important in the long run for children to be

interested; to know what kind of behaviour is expected and how to rein in the impulse to misbehave (self-regulation); to be able to wait, to follow directions, and to turn to adults and peers for help. This view is similar to that proposed by Maslow (1987). He characterised the 'self-actualised' child as one capable of tolerating uncertainty, problem-centred rather than self-centred and with a concern for the welfare of the wider world, an outside looking rather than an inside looking child who enjoys satisfying interpersonal relationships. Behaviours that assist children in achieving self-actualisation, or facilitate them on their journey, include the ability to become absorbed and concentrate; a willingness to try the new; a facility to listen to themselves as well as others; an honesty that allows them to be individual; a readiness to assume responsibility; the ability to work hard and persevere. Also important to this process is a sense of belonging, connectedness that assists in the development of well-being (Laevers, 2002). Prioritising emotional and social development, particularly in early education, can assist the children in their overall development and reformers such as Froebel, Dewey, through to Bruner, Elkind and Gardner, all identify the importance of this dimension.

Kuhn (1999) notes that we have only an imperfect understanding of the mechanism for attaining metacognitive skills and questions the extent to which we even understand what is attained. She concurs with Resnick and Nelson-LeGall (1997) when they suggest that what is attained comprises intellectual skills, attitudes and values best characterised as a constellation of dispositions or habits, ways of life practiced and valued in the community and, thereby, appropriated by children. They cite different studies from different schools in the US which attempted to teach children the strategies underlying intelligence from different theoretical standpoints with limited success. While students showed signs of developing the strategies and became capable of performing the skill that was taught, they acquired no general habit of using it and no capacity to judge for themselves when it would be useful (Resnick & Nelson-Le Gall, 1997). Their analysis suggests that if pupils are to develop a general ability to learn, if they are to learn how to learn, then it is necessary to include the development of dispositions or 'habits of mind', as described by Dewey (1938/1998) as an explicit part of the goals for education alongside knowledge and skill. More research is needed to come to a better understanding of what contexts and interactions facilitate the acquisition of such important dispositions.

3.7 The Affective in Development:

The affective dimension to development addressed here has been linked to the development in children of an identity as learner (Carr, 1997; 2001a; Dweck, 1999). As a goal for early education the development in children of an identity as learner would seem to be adaptive. It facilitates flexible, responsive learning to changing contexts and situations and rests comfortably with the contemporary emphasis on lifelong learning and learning how to learn. Katz (1995a) urges teachers to consider developing the affective dimension of cognitive development by assisting the child to become a 'good learner' rather than focusing on their being a 'good person'. She is concerned that too much attention to becoming a 'good person' may encourage performance for praise rather than learning for personal satisfaction in children. The two identities, 'good person' and 'good learner', are blurring and she cautions that being a good person, a moral domain, has become worryingly integral to what she calls '*the 'self-esteem' industry in early childhood*' (p. 5).

In psychological terms the term affective refers to emotion or desire, especially in influencing behaviour. It is derived from the Latin *affectus* meaning 'disposition' (New Oxford Dictionary of English, 1998). The affective dimension of a child's development influences motivation to learn; the sense of self as learner; the dimension of development which predisposes the learner to apply the knowledge and the skills acquired with some understanding of their role in the process. Rutter made the point as far back as 1985 that effective education would equip children with attitudinal and social skills if they are to apply and extend their academic skills.

While some academics and researchers were investigating the competencies of young children in areas such a metacognition and theory of mind others were questioning the dominant focus on skills and knowledge as goals for early education. At its most polarised one of the major questions in the debate centres around whether it is more beneficial for children if programmes follow the traditional model of education found at primary level: large group, teacher-directed, formal instruction in subject domains, or if they focus on education through small group, child-initiated, informal, activity based models. Studies indicate that there may be advantages and disadvantages to both approaches. Schweinhart & Weikart (1997), writing about models of early intervention, notes that the teacher-directed method seems to discourage social and emotional development, learning dispositions and creativity in children while an exclusively child-initiated, activity based

model may be insufficient to assist general academic development. Rodgers (1999) has dismissed what she calls the 'early years lobby' (p. 14) for their uncritical acceptance that young children learn best in activity or play-based programmes. She argues that many advocates of this approach do not give due attention to the quality of play, some of which has been observed to be aimless and lacking in purpose. She calls for more research of, and critical attention to, the aims of early education and the appropriateness of the learning activities in early years settings to these aims, particularly for young disadvantaged children and has been supported in her call by others (Anning, 1995).

Longitudinal research, primarily from the United States, supports the principle that activity based programmes which respect children as active participants in the early educational process yield sustainable benefits in terms of academic and social success in later life with measurable effects on school achievement and adolescent and adult adjustment. As discussed earlier Marcon (1999), in her extensive review of three different models of early education, found that the academically oriented programme showed a less beneficial effect on young inner city children than the 'mixed' programme, where traditional academic methods were balanced by more play-based, active learning. However, this 'mixed' model did not yield as positive results as the fully committed activity based programme. The longitudinal element of her research suggests that the trajectory of difference across these different models, favouring the latter, grows as the children progress through school. Other studies showing similar results include the HighScope Perry Preschool Project (Schweinhart, Barnes & Weikart, 1993; Schweinhart and Weikart, 1997) and the Carolina Abecedarian Project (Ramey & Ramey, 1998; Ramey, Campbell, Burchinal, Skinner, Gradner & Ramey, 2001). However, there are limitations to comparing the results of even well designed studies and there is no one programme or approach that works for all children in all settings. The methods used in evaluative studies, the questions asked by the researchers and the outcome measures chosen to measure effectiveness vary from study to study making direct comparisons difficult. Determining which approach to early education is appropriate in any given situation will depend on the context, values, goals and implementation of different programmes. Is there a common thread evident in the different successful programmes, a principle or goal common to them all?

In reviewing possible explanations for the success of these different studies Egertson (2003) observed that successful programmes are well planned and staff are well trained and supported in their work. All recognise the importance of quality early education for

later school success. In particular, all have a strong commitment to developing the affective dimension of learning. This reflects the views expressed by Rutter (1985) and Ball (1994) and others who concluded that the most important learning in early education has to do with the 'soft' and difficult to measure aspects of development such as aspirations, social skills, motivation and learner confidence. Research evidence suggests that this strong emphasis on the affective dimensions of learning (focusing on the development of aspirations, task commitment, social skills and feelings of efficacy) positively influences children's academic cognitive development (content knowledge and academic skills). This approach yields foundational short term benefits and sustainable long term benefits across social and educational dimensions. There is, however, no convincing evidence from the research that a similar emphasis on the academic dimension of cognitive development positively influences the affective dimension in children. This interpretation goes beyond the idea of a simple interrelatedness between academic and affective dimensions of development, proposing a strong line of influence in one direction rather than the other. The implications of this interpretation suggest that, rather than attempting to provide a balanced or mixed approach to guiding academic and affective skills development in young children, it would be more productive to foreground the affective, over the academic, dimension of development in early education. Some work to this effect is already underway in New Zealand (New Zealand, 1996), Italy, in the Reggio Emilia region in particular (Edwards et al., 1995; Rinaldi, 1995), the UK (QCA, 2000; SCAA, 1999) and Northern Ireland (Sproule, personal communication). Such a shift in focus requires a reformulation of the goals of early education, a review of the role of the adult and the child in the learning environment and a reconsideration of the outcomes to be assessed and the method of their assessment. Grounds for supporting this refocusing on the affective dimension of learning in young children can be found in the results of research into motivation and dispositions that have emerged from child development research and influenced the field of early education.

3.7.1 *Capabilities and dispositions:*

Individual learning power, or cognitive functioning, has two dimensions: *capabilities*, the skills and strategies and *dispositions*, the tendencies to learn and learn from learning (Resnick & Klopfer, 1989). In their article on the importance of dispositions to thinking and learning Perkins et al. (1993) make a cogent plea to move beyond ability-based analyses of thinking to consider other dimensions as of equal importance. Such dimensions include the less measurable, but no less important, sides of cognitive behaviour such as the

motivational, perceptual and affective. They argue that while an ability-based analysis of development captures an important aspect of intelligent intellectual behaviour, it does not tell the whole story. It is insufficient because it fails to take account of the disposition, or behavioural tendency, to apply knowledge or skills. Understanding where motivation or inclination comes from, how the inclination to apply skills or knowledge develops and how this might be cultivated in early education is an important challenge as it can set the stage for future school success. Perkins et al (1993) note that including a '*... dispositional analysis of thinking is closely linked to a culturally-based perspective on cognitive development because dispositions are acquired in precisely the same way that learning is ... through institutional and interpersonal levels of social contact*' (p. 17). Bloomer & Hodkinson (2002) agree that learning is tightly bound up with matters of identity and situation and cannot be extracted from them for isolated study. They cite Prawat (1998) who identified problems with much of the work into motivation, self-esteem and other qualities assumed to be alterable by appropriate intervention '*because of its uncritical acceptance of a Cartesian dualism, wherein mind is artificially separated from context .... motivation is wrongly separated from learning*' (cited at p. 583). Such a separation is a particularly important concern in early education where the integrated and holistic nature of learning has been highlighted (Abbott & Moylett, 1999b; Bowman et al., 2000; David, 1999b; Edwards et al., 1995; Ireland, 1999a, 1999b, 1999c; New Zealand, 1996).

3.7.2 *Defining dispositions:*

Dispositions have been defined in a variety of ways depending on the focus of the author. On thinking dispositions Perkins et al (1993) define a disposition as a behavioural tendency occurring under certain conditions. Resnick (1987) in making the case for cultivating the development of dispositions for higher order thinking in education writes that a disposition '*.... should not be taken to imply a biological or inherited trait. As used here, it is more akin to a habit of thought, one that can be learned and, therefore, taught*' (p. 4). This developmental aspect of dispositions is also evident in Bronfenbrenner & Morris's 1998 review of the bio-ecological theory where the individual is characterised as biopsychological and the active involvement and experiences of the individual can influence the degree to which dispositions developed will be generative or disruptive. Carr writing on learning dispositions in the early years defines dispositions as '*participation repertoires from which a learner recognises, selects, edits, responds to, resists, searches for and constructs learning opportunities .... Learning dispositions are about responsive*

and reciprocal relationships between the individual and the environment' (2001a, pp. 21/22).

Whether one views dispositions as primarily innate or as developing will determine the way in which they are viewed in education. Carr's later work (1998, 2001a, 2001b; Carr & Claxton, 2002) sees her emphasis on the developmental approach. Bloomer and Hodkinson, (2002) argue that considering learning dispositions as fixed traits is, in fact, limiting, and reflects just one view of cognitive psychology. This view considers that traits (and dispositions where considered as traits) are given and that learners have relatively fixed preferences and capacities for learning. On the other hand constructivists would argue that cognitive structures (schemata) are constructed and influence what is learned and how learning takes place in given situations. In this interpretation a learner's disposition to learn is not fixed or trait-like but depends on the individual's developing cognitive structures. More recently the recognition of the role of social context to learning has been studied and results attest to the interrelatedness of learner, activity and context (Rogoff, 1990; Lave & Wenger, 1991). This approach to understanding the learner attempts to capture the complexity and dynamism of learning and suggests that learning dispositions, far from being fixed or traits-like, emerge and develop in a dynamic way. In Bronfenbrenner's terms such dispositions may develop as generative or disruptive as a consequence of the learner's experiences and interactions.

In a comprehensive review of the definitional difficulties surrounding the concept of disposition Katz (1993) highlights the ambiguous and inconsistent use of the term in educational and developmental studies. Arising from her review of the literature Katz (1993) offers the following definition of disposition; a pattern of behaviour exhibited frequently and in the absence of coercion, and constituting a habit of mind under some conscious and voluntary control, and that is intentional and oriented to broad goals.

In an extensive consideration of the term 'disposition' Katz (1993) distinguished it from other personal characteristics such as *traits, skills, attitudes, habits, thought processes, motives* and *work inhibition* (See Appendix 1). Her review provides extensive evidence that supports attention to the construct of disposition as a separate characteristic. It seems useful for educators to assume that mastery or learning orientation, which could be called a general disposition to learn, is most likely present in some form at birth in normal infants. Its manifestation is likely to change with development, to be related to the child's

experience, and to be increasingly varied and differentiated with increasing age and experience.

This overview separates out the concept of disposition from a variety of others and her reference to a 'general learning disposition' has led to a rise in discussion and research within early education. Dispositions are an integral part of the individual child and can be identified through observing children's choices, decisions and actions. To develop and function they require a balance between the inclination of the learner and the goals of knowledge, skills and abilities to be learned. This suggests an active role for the teacher and the learning environment in the development of learning dispositions as well as in the teaching of skills and knowledge. This developmental view of dispositional learning is in keeping with our current understanding of the complexity and dynamic nature of learning and is the reason that consideration must be explicitly given to the fostering of learning dispositions in early education.

3.7.3 *Attending to dispositions:*

Conceptions about early learning in traditional early childhood curricula include the assumption that learning in early childhood is a preparation for future learning and is about '*acquiring the early rungs of a hierarchy of defined knowledge and skill, a process that begins the climb up the ladder to grown-up ways of thinking and learning*' (Carr, 1998, p.1). Such assumptions consolidate the view of the learner as an individual and learning as furniture of the mind. New conceptions about the curriculum recognise that it is in early childhood that children get their first messages about themselves, about what it is to be a learner, about the expectations and constraints that an environment can place on this. David (1990) has expressed concern that early educators, while attending to the development of literacy and numeracy skills may, in fact, underestimate the cognitive abilities of young children. As has been illustrated research from child development suggests that young children are capable of developing higher order thinking skills. Resnick (1987) draws a distinction between the development of higher order thinking and the cultivation of dispositions to apply higher order thinking. Cultivating the disposition to apply higher order thinking challenges educators in early education to consider how best to nurture the development and application of these skills.

As the development of skills and knowledge is considered the outcome of traditional education focusing on ability, so dispositional development is the aim of education

focusing on the affective aspect. Katz and Chard (1994) consider that introducing formal academic or direct instruction in the early years may jeopardise the development of desirable dispositions. They argue that there is, in fact, no compelling evidence that early introduction to academic work guarantees success in school in the long-term. On the contrary, there is reason to believe that, because of the dynamic nature of development, the cumulative effects of early introduction could work against development of desirable disposition. For instance, while the early introduction of academic work often results in young children with literacy and numeracy skills it may also inhibit the development of the dispositions to become readers, scientists and appliers of mathematics. Katz (1993) notes that there is a significant and important difference between being able to read and being disposed to read, being able to listen and having a disposition to listen. Both are interdependent; learning a skill or developing an ability may tend to make one more inclined to engage that skill or ability and conversely, the disposition to learn about something tends to lead to greater engagement and associated success. However, researchers on this topic caution that knowledge and skills developed do not necessary transfer from one context to the next. For instance, in her research Carr (1997) found that risk-taking and collaborative abilities revealed in socio-dramatic play were not necessarily transferred over to more school-like construction activities. It is important to consider fostering dispositions as well as capabilities when seeking to understand the complex process of cognition and adjust curricular aims and pedagogical practice in early education to facilitate the transfer of such learning to new learning contexts.

Looking at the early years curriculum from the point of view of the development of the child raises the question, what should be learned? Schools and preschools are deliberately designed to enhance knowledge and skill acquisition despite the fact that research shows, and many educators would agree, that motivation or the inclination to learn is influenced, one way or another, by school experiences and should be included among curriculum goals. However, despite this, concepts such as dispositions are not usually listed explicitly among curriculum goals, though they are often implied by the inclusion of attitudes, for instance towards learning, as goals and educators do recognise that it is possible to have skills but lack the inclination, wish or habit of using them.

To consider the inclusion of dispositions in curriculum goals requires some clarity about what exactly they are. Even those authors advocating attention to dispositions among educators recognise that the concept is messy (Perkins et al. 1993) and slippery (Carr,

1998). The concept is considered 'messy' because it invokes a vague assortment of ill-defined or immeasurable behavioural influences. Perkins et al. (1993) go on to note that '*dispositions inevitably include reference to things that are genuinely hard to pin down: motivation, affect, sensitivities, values and the like*' (p. 18). Carr considers dispositions to be a 'slippery' concept. She points out that inclinations must be guessed at from patterns of behaviour exhibited frequently, together with careful observations of the circumstances, observations over time and perhaps discussion with children and their families. The inclination or the intention is not separate from the circumstances, and the unit of analysis of interest becomes the *action* rather than behaviour. Action is not simply an observed behaviour it also includes intention and meaning. To understand it requires reflective observations, which move beyond the behaviour to understand the intention (Wertsch, 1991).

Research confirms that learning dispositions are important for development in young children (Sylva, 1994a; 1994b; Katz, 1993; Goleman, 1996; Smiley & Dweck, 1994; Kamin & Dweck, 1999) as they impact on present learning while influencing learning in the future. Sylva (1994b) drawing together the strands of research from various disciplines, concludes that '*preschool experiences put in motion a virtuous cycle of learning orientation at school entry, followed by teacher recognition and expectation, followed by pupil self concept, school commitment and finally success in adult life*' (p. 162).

In reviewing the goals in early education Katz (1988) identified dispositions as a separate goal for development to knowledge, skills and feelings. Carr argues the case for keeping them closely aligned on the basis that the more knowledge and skill one has in a particular topic or activity, the more one is, usually, inclined to become involved in it: the more hooks to which one can connect new experiences. This argument is resonant with Dewey's challenge to teachers to reform teaching by attending to the experiences of the learners and building on them to create new knowledge from the old (Dewey, 1916/1944; 1938/1998).

The recognition that the fostering of dispositions should be a role of education is evident in the works of Dewey (1938/1998) where he presents the notion of fostering 'good habits of mind'. The concept was reintroduced into the education debate by Resnick (1987) and taken up by Lillian Katz (1988) in the early education literature. Apart from their value as

a developmental goal for education dispositions can be seen as an explanatory construct for cognitive behaviour and, in the bio-ecological model of development, Bronfenbrenner and Morris (1998) distinguish between capability and disposition in the developing individual.

The studies by Dweck and her colleagues over the last two decades into motivation and beliefs in children suggest that when children consider intelligence as something that develops through their own contribution and effort (incremental), quality learning is the outcome. In addition, teachers are more likely to give positive feedback on effort and children's own contributions if they consider learning to be a balance between an individual's capability and their dispositions. This dual impact has a positive influence on children's sense of themselves as learners. Learning, or mastery (Ames, 1992), oriented children tend to exhibit positive learning dispositions and maintain persistence in the face of difficulty, locating any difficulty or problem in the context rather than within themselves. Where children consider intelligence as something they either possess or do not possess (entity) then learning is reduced to performance. Children who are performance oriented seem to assume that their ability to learn and their success on learning tasks is a measure of their own ability alone. Their goal is to achieve a sufficient level of performance for the reward available rather than to persist at a problem so that they might learn how to solve it and proceed.

Traditionally, curriculum and assessment have tended to prioritise capabilities over the motivation or inclination to learn because they are easier to define and measure and much less vague to articulate and assess (Perkins et al. (1993). Sylva (1994a) poses the question '*how do ----- adaptive and dysfunctional attributions begin ---- are they present at the very start of school?*' (p. 92). She refers to evidence from many sources that young children strive for mastery but notes that, by middle childhood, many children have abandoned mastery behaviours because of negative feedback and they opt for performance behaviours instead, a tendency also noted with concern by Donaldson (1978) in her influential book *Children's Minds*. A key point is that learning oriented children seem to have an awareness or even an understanding that learning does not depend on any single characteristic, such as ability, but rather on a combination of factors including the disposition to learn and the degree to which the environment and the people in it support learning over performance.

The adult is central to shaping and guiding dispositional development (Resnick, 1987; Katz, 1993; Carr, 1998, 2001b). Resnick (1987) wrote of the importance of shaping

dispositions to assist the development of critical thinking and noted that much of the shaping of the disposition is about learning to recognise and search for opportunities to apply one's abilities. Quality early education provides such opportunities but is also instrumental in shaping the disposition through careful observation of children to identify the emerging dispositions particular to individual children at particular times and in particular contexts. Feedback to children from the learning environment needs to be clear, explicitly articulating the features of the context, the task, the process and their function in it. Research indicates that responsiveness and vulnerability to teacher criticism can be seen by the age of five and it has been associated with the same views on the immutability of personal traits found in older children with 'helpless' orientations (Heyman et al., 1992). The work of Dweck and her colleagues, from an individual psychology viewpoint, has shed important light on the influence of socio-cultural and historical context on the development of learner identity, a development with the potential for influencing the quality of present learning and the direction of future learning. Dweck and Leggett (1988) note that 'adaptive individuals' coordinate learning and performance orientations effectively.

While it may be adaptive for children to coordinate learning and performance orientations in certain situations, contemporary education policy in the west emphasises the importance of children learning to learn and to develop an identity as learner early in their education (Katz, 1993; Carr, 1998). Adult sensitivity to the varied goals of education that may compete with this will affect the learning environment. Carr (2001a, 2001b) is concerned that current trends in early education may be presenting learning environments that encourage a performance rather than a learning orientation. Learning environments that encourage a mastery or learning orientation as opposed to a performance orientation in children will be characterised by what Carr (2001a, 2001b) calls an enabling 'dispositional milieu'.

Since the mid-1980s the term disposition has begun to appear with greater frequency in literature about children's learning (Katz, 1985; Resnick, 1987; Katz & Chard, 1994; Perkins et al, 1993).

Katz (1993) lists seven reasons for including the development of dispositions as a goal in early education (p. 11/12):

1. The acquisition of knowledge and skills alone does not guarantee that they will be used and applied.
2. Dispositional considerations are important because the instructional process by which some knowledge and skills are acquired may themselves damage or undermine the disposition to use them.
3. Some important dispositions relevant to education, such as the disposition to investigate, may be thought of as inborn. When children's experiences are supported to manifest dispositions they become robust; without such supports they are likely to weaken or disappear.
4. The process of selecting curriculum and teaching strategies should include consideration of how desirable dispositions can be strengthened and undesirable dispositions can be weakened.
5. On the basis of evidence accumulated from research on mastery versus performance motivation, it seems reasonable to suggest that there is an optimum amount of positive feedback for young children above which children may become preoccupied with their performance and the judgement of others rather than involvement in the task.
6. Dispositions must be included in the evaluation and assessment of an educational program.
7. Dispositions are not likely to be acquired through didactic processes, but are more likely to develop in young children as they experience being around people who exhibit them. Therefore, teachers and parents should become aware of what dispositions can be seen in them by the children for whom they are responsible.

This list affords a good basis from which researchers and practitioners can study the development and influence of learning dispositions in young children and their education.

3.7.4 *What are the learning dispositions relevant to early education?*

Katz does not give a definitive list of learning dispositions relevant to early education and points out that for a list to be useful it cannot be too general or too specific and it must be culturally relevant. Bronfenbrenner (1979) drew on the notion of dispositions when describing 'educational competence' in terms of the disposition to think, to persist, to give ideas, to contribute ideas and to work collaboratively. His later work within the enhanced bio-ecological model of development discusses the development of generative and

disruptive dispositions (Bronfenbrenner & Morris, 1998) but he does not itemise those dispositions relevant to specific microsystems. Goleman (1996), in his book *Emotional Intelligence,* identifies seven key ingredients (disposition-like elements) as central to the capacity to know how to learn. These are confidence, curiosity, intentionality, self-control, relatedness, communication and cooperation Finally Claxton (1999a) described 'learnacy' (an aspect of education he sees as comparable to literacy and numeracy) as comprising curiosity, mindfulness, selectivity, resilience, experimentation, reflection, opportunism and conviviality. Within early education in particular Katz and Chard (1994) contend that parents and teachers generally agree on the desirability of encouraging children to be curious, creative, resourceful, responsible, independent and to show initiative, although the literature on parental and teacher expectations is less than equivocal on this final point.

Considerable work on dispositions in an early educational context is emerging from New Zealand where the concept has become a core element of their early education curriculum (1996). In particular, the concept of learning dispositions in early education has been critically refined and conceptually and operationally clarified by the work of Carr (1997; 1998; 2001a; 2001b). Her work has extended the idea of dispositions to the field of early learning and also focuses on the distinction between capabilities and dispositions. She has distinguished learning dispositions from thinking dispositions regarding thinking as an element of learning and has defined learning dispositions in early education as '*participation repertoires from which a learner recognises, selects, edits, responds, searches for and constructs learning opportunities'* (2000b, p. 1).

Drawing on her analysis of the New Zealand early education curriculum, *Te Whariki,* Carr identifies six key learning dispositions: courage, curiosity, playfulness, perseverance, confidence and responsibility and proposes that early education should be aimed at developing individuals who are 'ready, willing and able' and characterises learning dispositions as 'being ready, willing and able' and believes such dispositions can be fostered through appropriate pedagogy (2001b). This characterisation of a good learner draws on the work of Claxton (1990) who wrote that '*it can be strongly argued that school's major responsibility must be to help young people become ready, willing and able to cope with change successfully: that is, to be powerful and effective learners*' (p. 164). Carr views *being ready* is seeing oneself as a learner – it is about identity or a sense of self as a learner. Much of the work of Dweck and her colleagues centres around how this disposition develops as an adaptive 'learning orientation' (becoming a generative

disposition) as opposed to its developing as a non-adaptive 'performance orientation' (becoming a disruptive [Bronfenbrenner] or damaged [Katz] disposition). *Being ready* to learn is a characteristic of individual children that can be cultivated by the teacher and the environment. It is that element of education which confirms and endorses children as participating learners in the educational process, or not. *Being willing*, on the other hand is more about process than a characteristic. It is a transactional process between the learner and the environment for which the teacher has considerable responsibility. Being willing is recognising that this place is (or is not) a place for learning. *Being able* is having the abilities and funds of knowledge that will contribute to the relevant actions associated with being a participant learner, owing much to opportunity and experience. It is important to recognise here that when Carr writes about 'being ready' to learn she is not writing about 'readiness' as it is often characterised (See Appendix 2).

The concept of learning disposition and its relevance to early education in terms of children being ready, willing and able is valuable in that it allows the teacher to focus on the individual child as unique, link the individuality of the child with contextually desirable aspects of learning and create an early childhood curriculum that empowers the child towards present learning and future school and life success. Carr (1998) believes that dispositions depend on context and are sensitive to occasion. For instance there are times when it is appropriate to persist at a task and others where it is dangerous; a child may assume that to persist is inappropriate if a task is, for instance, regarded as gendered; she instances the example of woodwork where girls are less likely than boys to persist. Similarly dispositions might never develop if the opportunities are not presented. A curriculum for the early years should include learning dispositions as a key outcome; it will need deliberate nurturing by adults to establish a learning climate in which stereotypes are questioned, new challenges are tackled and it is standard practice to risk being wrong. Carr suggests that an outcome for early education is adaptive learners who can effectively coordinate performance and learning goals, balancing curriculum aims of belonging and exploration. Her research supports the notion that the basis of learning or performance goals appears to be socio-culturally and historically linked to social identity. Learning orientation children strive to increase their competence, to understand or master something, to attempt hard tasks and persist despite failure or setback. Performance orientation children, on the other hand, strive to gain favourable judgements and avoid negative judgement of their competence. They are anxious to appear competent to the extent that

they avoid harder tasks where the outcome is uncertain. These learning characteristics have been found in children as young as 4 or 5 years of age (Smiley & Dweck, 1994).

Despite the recognition that early education must balance attention between developing the capacities and the dispositions of the learner and the encouraging data emerging from research into fostering and assessing learning dispositions (Carr, 2001a) there are difficulties with the concept of disposition itself. To begin with it is difficult to define (Perkins et al, 1993; Carr, 1998; Campbell, 1999). It has been used to describe pro-social qualities such as cooperative disposition, or accepting disposition (Katz, 1995a) thinking qualities (Perkins et al., 1993; New Zealand, 1996) and learning qualities (Carr, 1998, 2001b). Campbell (1999) calls for desirable dispositions to be defined and described clearly. She goes on to argue that the case for the existence of universal dispositions has yet to be made and challenges researchers to find a way of considering dispositions within the frame of a child's thinking, inclinations, goals, knowledge, skills and abilities to provide concrete tools for developing a child's desirable dispositions within early educational practice. Carr (1998, 2001b) provides a thorough conceptualisation of learning dispositions in early education which goes some way to meeting these demands.

3.8 Conclusion:

The dominant influence of the Piagetian theory of cognitive development in early educational research and practice is being challenged by a more complex, socio-cultural approach to understanding young children's learning in context, taking account of the active role they play in this learning. Early educational initiatives, particularly for children from 3-6-years of age, have given rise to a rich body of research which has identified many of the characteristics of quality early education. Child development is enhanced, for instance, in classrooms which are well organised and child-focused and where teachers play an active, facilitative role rather than a didactic one. High quality learning environments are those where teachers interact with children in a responsive and informative way, encouraging verbal and social interactions and where teachers have high expectations of children. Key features of high quality early education include: classrooms with fewer children, opportunities for child-to-child interactions and teachers with a high level of appropriate training who give specific and responsive attention to individual children and are reflective and flexible in their planning and practice.

The development of individual children is most usefully characterised in both normative and dynamic terms. An understanding of normative development has been found useful in guiding curriculum planning but, in day-to-day early educational practice, research suggests that it is the dynamic dimension of development that is most important for the individual child and teacher. The opportunity for positive interactions between children and their environment, the people, materials and ideas, has also been identified as a crucial element influencing positive development. Current research from developmental psychology indicates that it is not simply the opportunity for interactions but the actual process itself that is important. In particular research is highlighting the value of dynamic, bidirectional social interactions as crucial to early development. The importance of bidirectional, transformational interactions in stable learning environments lies in their contribution to facilitating children to explain their ideas to others, negotiate and argue a point and clarify their thinking thus refining their social, cognitive and metacognitive skills.

There are two dominant dimensions to individual early learning: capability and disposition. Recently there has been extensive research carried out into the importance of learning dispositions in early childhood. Findings suggest that early education programmes which have a strong emphasis, curricular and pedagogical, on the nurturing of affective development positively influence children's overall development, including their academic cognitive development. There is, however, no convincing evidence from research that a similar emphasis on academic cognitive development enhances affective development. The challenge in early education is to develop positive learning dispositions in young children and encourage curricular and pedagogical developments to this end. The next chapter reviews some contemporary early educational models which have, to some degree, addressed this challenge.

CHAPTER 4

FACTORS INFLUENCING PROCESS IN EARLY EDUCATION

Introduction:

Initially this chapter was titled 'From Theory to Practice' to provide a vehicle for considering how our current knowledge about child development and early education might impact on adult behaviour in early education settings. However, to limit consideration of the impact of theory to early educational practice is to fall into the trap of foregrounding one variable within a dynamic process and to accentuate its power and influence. Central to this study is the argument that it is the continuous process of early education in context, rather than the sum of the elements that matters to young children and their development. This is not a novel view. Dewey in *Experience and Education* wrote that '*mankind ... is given to formulating its beliefs in terms of Either-Ors, between which it recognises no intermediate possibilities*' (1938/1998, p. 1). The importance of moving away from focusing on the adult, the child or the activity in isolation to a more careful focus on interactions as a unit of analysis has attracted attention among contemporary educational researchers (Sylva, 1997a; Wertsch, 1998). This study agrees with the importance attached to attending to the complexity of interactions in early education and contends that the child's own dynamic development within context must also be recognised as an influencing factor in the early educational process itself. For this reason the title was altered to reflect its focus on how theory and wider social policy influence the integrated and dynamic process that is early education.

4.1 Planning for Learning in Early Education:

To capture the integrated and dynamic nature of education, John Dewey (1916/1944) wrote of the continuous process of education and emphasised the active role of the child in the process. He stressed the importance of interest as a motivating force for activity and reflection and saw the role of the adult in the process as that of guide or mentor. The classroom environment should be democratic so that children have the opportunity to develop those skills essential to participation in a democracy, a view very much to the fore of educational writing to-day (Carr & Hartnett, 1996; Edwards, 1998; Nutbrown, 1996). He argued that for effective education, with both short and long-term impact, curricular

aims and content are best derived from the interests and activities of the child. He called on educators to recognise the child as a social individual and encouraged teachers to consider and use children's own experiences and interests as the basis for their practice. Despite acknowledging the individual potential of each child he was critical of the child study movement which, he argued, overestimated the maturational and biological basis of learning and development (1902/1956). His view of learning as the remaking of the old through union with the new resonates with contemporary attention to the wider context of learning. It captures the idea of construction and reconstruction of knowledge. From this perspective learning is characterised as active, social, dynamic and transforming. The process itself is a key part of the educational experience and one which deserves analysis in and of itself (Bronfenbrenner & Morris, 1998; Wertsch, 1998).

In many ways Dewey's views of child development and learning, which were ahead of their time, suffered from the absence of a contemporary psychological framework (Hilgard, 1996). The data emerging from current child development research, as outlined in preceding chapters, support many of Dewey's assertions about how best to facilitate learning in a way that is meaningful to both child and a democratic society. His ideas on educational practice, strengthened by supporting contemporary developmental research, are, once again, informing innovative practices and curricular models within early education (Cuffaro, 1995; Darling & Nisbet, 2001; Glassman & Whaley, 2000; Tanner, 1997). At the time he was writing Dewey was criticised for proposing a 'soft pedagogy' by James (cited in Hilgard, 1996) who dismissed the idea of allowing children to learn through active exploration and examination of materials. Dewey countered by pointing out that it was the misinterpretation of his ideas rather than the ideas themselves that caused difficulty. In respect of interest as a central element in motivating learning he agreed that where '*interest is taken to mean merely the effect of an object upon personal advantage or disadvantage, success or failure ….. [the] procedure is properly stigmatised as 'soft' pedagogy; as a 'soup-kitchen' theory of education*'(1916/1944. p. 126). For Dewey interest is far more than this. It emerges from the child and connects things that may be distant and prompts linkages, through action, problem-solving and the use of materials, which extend children's learning. Further misinterpretations of his ideas within the progressive education movement led to an over-emphasis on the freedom of the child in education, with teachers playing a more distant and unobtrusive role than he would have advocated (Ryan, 1995). However, now most early education settings offer some blend of child-centred and teacher directed instruction.

The traditional polarity between teacher directed and child-initiated early education programmes can be characterised as a difference in focus: a focus on either an academic or an activity/play-based curriculum. As the name suggests, an academic programme is guided by the content of the curriculum and the expected outcomes. On the other hand, an activity or play-based programme functions in the belief that learning occurs as a result of activity. Given our current understanding of the complex nature of learning, neither of these two approaches is sufficient in itself. On the value of child-initiated (activity) over teacher directed (academic) programmes Leseman, Rollenberg and Rispens (2001), in a comparison of different models of Dutch early educational provision, argue that within the constraints of the Dutch kindergarten curriculum, free play (child-initiated) was found to be superior from the socio-cultural point of view. In the Irish context it appears, from the limited research available, that for the older preschool age group the academic, teacher directed approach predominates in primary school classrooms and the activity or play-based approach predominates in preschools (Hayes et al, 1997; Horgan, 1995). Finding a way to balance the two approaches that captures the dynamic, continuous process of education in practice – for both the child and the adult – is a challenge for early education.

Emphasising the dynamic nature of early education and the multi-layered effect of the processes on those involved, and on the processes themselves, has led to a move away from drafting curriculum in the more traditional, prescribed manner of primary and secondary school curricula. There are different views on what the purpose of early education should emphasise in terms of the learning and development of young children. In her book *Planning an Appropriate Curriculum for Under-fives,* Rodgers (1999) focuses on education as equipping children with the skills to learn from experience in their environment through various forms of representation. She argues that while biological endowment gives us the capacity to experience the environment, it is through culture that these capacities are extended. For this reason she argues that it is appropriate for early education to focus on the development of representational skills. However, this is not a universally agreed interpretation of children's developmental needs at this age. For instance, Gardner, Torff & Hatch (1996) note that *'[U]ntil the age of 5 or so – assuming a sufficiently rich environment, the development of competence within symbolic systems occurs without the necessity of much direct instruction or crafted mediation'* (p. 34). An alternative approach to that proposed by Rodgers would be to look to early education as developing and nurturing those less definable skills, such as motivation, organisation,

inclination and attitude to learning, which appear to facilitate the application of the literacy and numeracy skills and competencies valued by primary education. In attending to these dispositional aspects of learning it is important to provide a context which is meaningful and relevant to the child as learner through interactions and relationships aimed at nurturing the affective dimension of learning within a content rich context (Katz, 1995c). In this way it will impact on those 'basic skills' identified by policy makers as so important to later school success.

There is an international trend towards reconsidering curriculum and practice to ensure that it takes account of child development, contextual variables and the dynamic interactions that are the essence of early education. In some countries, such as New Zealand and Scandinavia, this is being addressed by the emergence of national curricular guidelines or frameworks to support educators in their practice. In other countries, for instance the United States, there is no national curriculum but professional bodies, such as the National Association for the Education of Young Children (NAEYC), have developed national guidelines for practice (Bredekamp, 1987; Bredekamp & Copple, 1997). This trend is causing a move away from formal didactic modes of instruction and a loosening up of centrally determined curriculum content. The result is greater attention to a pedagogical style that is child and context sensitive, emphasising the social, experiential and active nature of learning (Banks, 2000; David, 1993; Pascal & Bertram, 1993). This move to understand and explain the dynamics of the early learning and teaching processes presents a difficulty in separating out pedagogy from curriculum content. They are both central elements of a continuous process where the one depends on the other. This process is less content bound in early education than in later stages of education although to be effective in terms of development and learning the practice must be content rich.

Academic curricula are content focused and generally are accompanied by defined and explicit learning goals or desirable outcomes for the child. Goals and objectives are destinations to be reached by the child and, in this way they limit the focus on process. Such emphasis has been criticised as being inappropriate for young children with too much emphasis on the future and insufficient attention to the importance of day-to-day experiences or natural curriculum (Siraj-Blatchford, 2003) on their actual development. Activity based curricula, on the other hand, attend more to the child's way of learning and emphasise principles rather than goals. This focus on principles and aims allows for greater flexibility and responsiveness to the immediate learning context for the child. They too

have been criticised, mainly for giving too much attention to the child and relegating the teacher to a mere observer.

One of the major problems resulting from the ongoing arguments over curriculum types, goals and methods is that both sides in the struggle may overlook curriculum and teaching methods beyond the traditional dichotomy. The results of many studies suggest that both sides underemphasise and undervalue a third option – namely, curriculum and pedagogy that address children's current interest and the progress of their intellectual development as distinct from the direct instruction emphasis on academic learning and future outcomes or the child-initiated learning emphasis on children's play and self-initiated learning in the immediate present (Banks, 2000; Katz, 1999a, 1999b). This 'third' approach can be called the process approach and its essence is that the curriculum is located within a firm set of principles rather than guided by a set of short-term objectives or goals. These principles allow early education to meet the immediate learning needs of the child and also allow the teacher to plan for future development and learning in line with the individual child's own interest, experience and developmental level.

4.1.1 Learning in action:

While recognising that there is no linear relationship or neat path of progression from a single developmental theory to a single pedagogical approach (Johnson, 1988), or vice versa, this chapter brings together examples from contemporary early educational practice and curriculum which address the complexity and dynamism that characterises young children's development. Researchers recognise that to understand more about the influence of early education on the development of young children studies must take account of the contexts in which learning occurs and its meaning for the child and the adult. Increasingly, researchers are undertaking the examination of development within natural contexts. Questions about how young children learn and, in response, how they should be taught are guiding curricular development and practice, rather than questions about what children should learn and the content of the curriculum. Educators, policymakers and researchers are increasingly seeking to understand what young children do and how they learn rather than merely prescribe what young children should be taught.

We now have evidence that the dynamic process approach to early education offers more for children's positive development than either the academic or play-based alone. Research consistently shows that successful early education facilitates the child in active

learning in learning environments or 'dispositional milieu' (Carr, 2001a) that are well planned, where staff are well trained, confident and supported in their work (Abbott & Rodgers, 1994; Ball, 1994; David, 1993; Ireland, 2002b; Katz, 1996). Interpretation has become central to both children and adults as they participate in the process of early education: children interpreting and making sense of the world and adults, observing, reflecting on and interpreting children's behaviour to plan the curriculum and assessment and guide their practice. From the pedagogical perspective, quality models of early education are characterised by underpinning principles which present a view of the child as an active partner in the integrated and ongoing process of learning reflecting a strong commitment to developing the social and affective dimensions of learning as well as the more traditional emphasis on cognitive development. This reflects the views expressed by many, including Rutter (1985), Ball (1994), Sylva (1994a), Bruner (1996) and Carr, (2001b), that the most important learning in early education has to do with the 'soft', affective and difficult to measure aspects of development such as aspirations, social skills, motivation, organisation, learner identity and confidence.

There is a need to consider the balance between attention to the cognitive and affective in early education. Blenkin and Kelly (1997), perhaps pragmatically, suggest that there should be equal weighting to both in early education but current research suggests a need to actually emphasise the affective dimension over the traditional cognitive elements of learning. This does not mean that early education should ignore skills development or knowledge acquisition. Practice aimed at encouraging the development of learning dispositions and metacognitive skills cannot be content free; indeed it is essential that children's interactions with their environments are challenging and rich in both language and content. This can be either directly, in terms of the content of social interactions with an adult or advanced peer, or indirectly through the carefully considered provision of materials, objects, activities and opportunities.

There is a crucial role for early educators to play in enhancing the opportunities for all young children to learn effectively during the early years. There are also implications for early educational curriculum development and pedagogy. There is no point in nurturing affective development and metacognitive skills in a content vacuum (Comber, 2000; Kuhn, 1992). Wood (1988) argues that teaching '*invites interaction, negotiation and the shared construction of experiences*' (p. 210) which enables the child to learn the 'language' of – for instance – mathematics. What does this mean for particular subject areas? In this

regard he writes that '*a sound psychology of mathematics would subsume a theory of the (common) conceptions that children bring to bear on mathematics problems. It would also offer a sense of direction as to how, where and when we respond to these. However, ... such knowledge would not provide a map of the learner's terrain, though it would improve our sense of direction*' (p. 210). Interactions that are meaningful to the child and a curriculum that is relevant to both the teacher and the child are likely to be most effective in terms of positive development and learning.

The evidence suggests that early education that emphasises the affective dimensions of learning and those cognitive skills associated with the planning and organisation of knowledge positively influences children's later academic cognitive development in terms of content knowledge and literacy and numeracy skills. This approach yields foundational short-term benefits and sustainable long-term benefits across social and educational dimensions.

4.1.2 Towards effective learning:

This shift in attention away from what we should teach young children in early education has led to questions about how best to achieve 'effective learning' through 'effective teaching'. There is sufficient understanding of development and learning to describe what 'effective learning' might look like in practice. In their description of 'intelligence-in-practice' Resnick & Nelson-Le Gall (1997) capture some of the features of effective learning. Children who are considered 'intelligent-in-practice' believe that they have the right (and the obligation) to understand and make things work; that problems can be analysed, that solutions often come from such analysis and that they are capable of that analysis. They have a variety of problem-solving skills and good intuitions about when to use them; know how to ask questions, seek help and get enough information to solve problems and have habits of mind, or dispositions, that lead them to actively use these various skills and strategies for acquiring information (p. 149/150). Central to this development is the learner's identity of self as a learner and a sense of belonging to the learning community (Carr, 1998; Pascal & Bertram, 1993; Sylva, 1994a). This attention to the active participation of the child resonates with parallel developments with respect to children's rights and children's visibility in the learning process in general. It challenges educators and policy makers to consider what it means to facilitate such active participation, particularly in early education; it further challenges us to consider what knowledge we should attend to in early education.

The review of literature already presented indicates that we should emphasise the development of affective, cognitive and meta-cognitive skills. Developing such skills commences in the earliest years of life. Differences in motivational and belief systems in learners, and associated institutional support systems, can be detected in young children during early education (Dweck, 1999; Heyman et al., 1992; Katz & Chard, 1994; Tobin, Wu and Davidson, 1989). Modern pedagogy is moving increasingly towards the view that educators should equip children with a good understanding of how they think and how they organise knowledge and information. Bruner (1996) contends that *'the child should be aware of her thought processes, and that it is crucial for the pedagogical theorist and teacher alike to help her to become more meta-cognitive – to be aware of how she goes about her learning and thinking as she is about the subject matter she is studying. Achieving skill and accumulating knowledge are not enough'* (p. 64). The affective and cognitive abilities described can be developed through attending to the quality of interactions, communication and relations between individuals and their social environment. This, in turn, can reinforce the development of a sense of belonging, connectedness and community identity; critical foundations for later educational and social success.

Fostering the development of both the metacognitive and affective dimension to learning in early education can enable children to become ready, willing and able learners (Claxton, 1990; Carr, 2001b). Such development and learning is particularly important in young children as it facilitates the acquisition, comprehension, retention and application of what is learned, assists learning efficiency, critical thinking and problem-solving and gives children control or self-regulation over thinking and learning processes and products (Hartman, 1998; Kuhn, 1999; Larkin, 2002; Lipman, 1989). For teachers to assist this process they must consider how best to facilitate the development of metacognitive awareness and management of cognitive processes. They must, in essence, assist children in learning how to learn, in recognising themselves as competent and masterful learners who can explore and problem-solve and are sufficiently self-aware to seek assistance when necessary. The language and content context for such teaching is guided by the experiences and interests of the children augmented by the teacher's ability to extend such experience and interest.

4.2 Contemporary Approaches to Early Education:

There are many different curriculum models used in early education and they vary in the extent to which they specify a particular programme and the freedom they give the adult to interpret implementation of the model's overall framework. Extensive descriptions of a wide range of approaches used in early education internationally can be found in Epstein, Schweinhart & McAdoo (1996), Goffin & Wilson (2001) and Roopnarine and Johnson (2000). Some programmes, such as Montessori, can be specific about the role of the adult while others, such as the national curricula serving four and five year olds in Ireland and the UK can define the content and outcomes.

4.2.1 Values and principles informing practice:

Different systems of education are driven by different beliefs and values about early childhood and their early educational practices vary accordingly. Variations in curricula reflect the different values and understandings societies have concerning how and what young children learn. These values and beliefs inform the design of curricula, the location and support of services, the role of the teacher and the degree of involvement of children in the process. The decision on where to provide early education and what that education might look like are policy decisions which influence the learning experiences of young children. In writing about the interactive and dynamic influences on the early educational experiences of young children Corsaro (Corsaro, Molinari & Rosier, 2002) takes a broad ecological perspective and challenges researchers to consider the wide range of factors influencing the early years experience for children. Such factors include the characteristics and experiences of the individual, the interpersonal dimension of the process and the cultural or community influences (p. 330).

In addition to values and beliefs theories of child development also inform curriculum development and design and impact on practice. The theoretical influences on a curriculum can be discovered either through analysis of the theories whose principles are embodied within its aims and objectives or through the direct observation and analysis of practice, the implementation of the curriculum. Wood (1988) acknowledges Piaget's enormous contribution to our understanding of cognitive development and credits him with opening exciting fields of research which have, over time, been critical of Piaget's own idea. In early education Piaget has been explicitly identified as influential in a number of curricula documents including the HighScope curriculum, a curriculum developed as an early education intervention programme for disadvantaged children in the US. Although

identified as a cognitively-oriented, constructivist model by its authors it has a strong socio-cultural dimension to it also (Sylva, 1997a). In many ways it can be seen to rest, in emphasis, somewhere between the traditional early educational curriculum typified by attention to subject domains, as found in the UK, US and Ireland, and characterised as a 'step' curriculum which attend to normative development and the more dynamic curricular approaches typified as 'spiral' or web curricula (Rodgers, 1999) which attend to the dynamics of development. The latter is well developed in New Zealand with the publication of the Te Whariki early years curriculum (1996), in Italy, typified by the Reggio Emilia approach and, to some extent, the project or thematic approach which is found in the more traditional nursery/playgroup approach to early education (Early Years Curriculum Group, 1989; Katz & Chard, 1994).

Considering early childhood development and education from within the bio-ecological model requires this level of analysis to capture the richness of interactive influences and allow for a sophisticated analysis of effects to guide principles and practices. The PPCT model (Bronfenbrenner & Morris, 1998) calls for consideration of the context at a variety of levels – including the level of social policy reflecting the values and beliefs that a society has relating to its young children. This section presents a review of different approaches in early education and has selected a sample of the most widely known approaches to illustrate how different beliefs about early education can impact directly on the type of the early education experienced by young children. The examples selected are drawn from different social and cultural contexts and they are presented to illustrate the degree to which beliefs and values impact on the lives of young children, a dimension often neglected, even in socio-cultural theory and research (Corsaro, 2003). The approaches presented come, in the main, from Italy, New Zealand, Scandinavia, the United States, England, Northern Ireland and Ireland and represents those approaches most widely researched and discussed on the international stage.

4.2.2 Reconceptualising care and education in early education:

The degree to which a state involves itself in early education and the extent to which early education is regarded as a care/welfare or an educational aspect of policy influences the funding, focus and the status of early education and, in turn, the process of early education itself. From the thematic review of early childhood education and care policy across twelve countries carried out by the OECD (2000) it is evident that reasons for investing in early education are embedded in cultural and societal beliefs about young children, the role of

the family and of government and the purpose of early education. For instance, the majority of early years services in Italy, Scandinavia and New Zealand are developed as a support to parents and their children. They are state supported for all children and no distinction is drawn between the care and educational dimensions. The services offered tend to be full day and available to the majority of children. In Italy, for example, government-supported voluntary preschool education attracts 94% of three to five year olds (Corsaro, 2003).

On the other hand, in Ireland, England, Northern Ireland and the US there is a clear policy distinction drawn between care and education. In these countries children typically attend primary school from the age of 4/5 years. Those early educational, or preschool services outside the school system and receiving state funding are largely supported as part day educational intervention for disadvantaged children and their families (Bowman et al, 2001; Hayes, 2001; OECD, 2000). They are targeted at children considered to be at risk in terms of their linguistic and cognitive development and often include a compensatory education dimension to their programmes to give children a 'headstart' before they enter elementary school. In Ireland the Rutland Project and the Early Start programme are examples of this type of provision (Hayes, 2001; Ireland, 1999a). The majority of 'early education' provision in these countries is considered to be childcare and is regulated, in the main, as a health, safety and welfare, rather than education, service. While receiving some state support in certain circumstances it is mainly privately funded as either a 'for-profit' or 'not for profit' service. Some recent developments in the UK – such as investment in the SureStart project - reflect a move towards a more integrated policy approach (QCA, 2001).

In the context of the continuing distinction made between care and education in certain countries, a distinction which mirrors that made between play-based and academic models of early education, Caldwell (1989) attempted to find a balance by coining the terms 'educare'. This concept was intended to bring together care and education as equally important for curriculum development and pedagogy and was intended to describe as approach to education, which offered '*a developmentally appropriate mixture of education and care; of stimulation and nurture; of work and play*' (p. 266). Although the term has not really been taken up in the everyday language of early education it did force further debate about how best to consider these two interconnected elements of early education and, in particular, how to reconceptualise 'care' so that it ranks equally with education in early educational process and practice (Hayes, 2003a; Karlsson and Pramling, 2003). One

of the obstacles to this is the strong association between the concept of care and that of mothering. To move beyond this it is necessary to improve our understanding of what it is to be a caring teacher and to acknowledge that it goes far beyond the notion of 'gentle smiles and warm hugs' which obscures the critical developmental and educational value of early education and the complex intellectual challenge of working with young children (Dalli, 2003).

In reading the authors writing in the late 19th and early 20th century one finds references to nurture rather than care when writing about the needs of the younger children. The word nurture has quite a different tone to it than the word care. In comparing the meaning of the two words 'nurture' is far more engaging and active than 'care'. To care is almost custodial in tone and requires a minimum of interaction; the adult merely provides for and looks after the child. To nurture, on the other hand conveys a far more engaged level of interaction and requires the adult to actively nourish, rear, foster, train, and educate the child.

The title Froebel finally gave to his centres for the education of young children – kindergarten – was intended to capture his belief that young children's learning needed to be nurtured. For this reason he also argued that only women should teach very young children! Robert Owens in his educational facilities also recognised the importance of play in a nurturing environment when he dictated that children under six years should not be annoyed by books but, rather should be allowed to play and make music (Tizard & Hughes, 1984). The word nurture – as opposed to care – was used by McMillan (1920) when she claimed that a lack of education and nurturance in the first years of life would 'cloud and weaken' all the rest of life (Curtis, 1997).

The caring, or nurturing, responsibility of the adult – where care is recognised as more than mere 'minding' - gives an enhanced educational role to it. The idea of considering care as nurture gives it an active connotation with a responsibility on the adult to provide nurturance and foster learning rather than to simply mind or protect the child. Such a shift in emphasis would also raise the expectations held of how teachers in early education practice. The role of the adult in early childhood education is crucial and multi-faceted (Athey, 1990). It is a combination of listener, questioner, advisor, demonstrator, actor, sympathiser, negotiator, assessor and guide. In addition, the adult must also recognise

their role as a 'learner', a reflective observer of children who learns from observation and uses this as the basis for pedagogical practice.

It has been argued that reconceptualising care as nurture would strengthen the attention to the educative value of care and allow for a more appropriate 'nurturing pedagogy' to emerge in early education learning environments (Hayes, 2003b). If adults are to nurture children's learning they must develop skills of observation and reflection to allow for the non-intrusive planning and provision of a learning environment that supports and extends children's own learning. This allows for increased attention to positive interactions between child and adult and also allows for planning by the adult for future opportunities that might extend the child's own learning; it gives a role to the adult which takes the child as central. It encourages the movement away from the organisational/ management role of the teacher evident from the research into Irish pedagogical practice with young children and fosters the processes of interaction, dialogue and planning leading to the co-construction of knowledge.

Over the years there have been a number of studies comparing curricular principles, aims, objectives and methods (Epstein, Schweinhart & McAdoo, 1996; Marcon, 1999; Schweinhart & Weikart, 1993). Reviewing and comparing early educational curricula has had a somewhat chequered history and has been driven by a variety of different interests ranging from quality evaluation, the needs of parents and cost-effectiveness of services (Goffin, 2000). Despite the presence of a vast array of approaches to early education (Roopnarine and Johnson, 2000) a review of the more well known ones illuminates two distinct styles of early educational policy, provision and practice reflecting:

a) Two different views of the child as either
   * dependent and in need of socialisation and preparation for school
   * strong, resilient, curious and playful – learning all the time and

(b) Two different views of the early education as
   * care/welfare for disadvantaged children with state supported intervention programmes to act as a compensatory 'headstart' for children before school or
   * a distinct period of education in the life of the individual and available to all children.

These differing views of the child and of early education impact on the public support provided for early education as education, the curricular style and the acceptable

pedagogy. The comparative ethnographic studies of Corsaro in the US and Italy act as a micro-study for what seems to be a wider phenomenon. In countries such as the US[3], where four and five-year-olds are educated in the traditional classroom based didactic context of the school, one finds a particular policy view of the child as dependent and needing to be taught prescribed skills and knowledge and of early education as a preparation for school. In countries such as Italy, where formal schooling commences at the age of six or seven years, there is a view of the child as a resourceful and strong participant in their learning. Early education is considered a critical and unique period of education where children are encouraged to develop skills and knowledge through their experiences and interactions with the learning environment.

The independent development of the educational and childcare sectors has been identified as one of the key problems facing the development of early education in Ireland as communication between the two traditions has been rather limited (Eduction Research Centre, 1998; Kellaghan, 1992). The power and influence of this historical distinction can be seen in the government *White Paper on Early Childhood Education* (Ireland, 1999a) which commits to the underlying principle that *'for young children, education and care should not be separated'* (p.4), while at the same time noting that *'care is the dominant requirement of children aged less than 3 years and ... education is a more significant need of older children'* (p. 4).

Contemporary research now supports the view that early education curriculum and pedagogy should be broad and holistic, with a greater emphasis on development goals than on subject outcomes (Bredekamp & Copple, 1997; New Zealand, 1996); more process related and co-constructive (Bowman et al., 2001; Lambert & Clyde, 2000); defined by the vital interests and needs of children, families and community (Abbott & Moylett, 1999b) and more in tune with socio-cultural contexts (Woodhead, 1999a). This supports the development of flexible curricular frameworks that give freedom for adaptation, experimentation and cultural inputs (OECD, 2002. p. 116)

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[3] It is important to note that in countries such as the US and UK where public policy on early education for older preschool children reflects a preparation for school model there are vibrant early education groups articulating approaches which seem more in line with our current understanding of young children's learning and reflected in the interactive and dynamic approaches espoused in the public policy of Italy, New Zealand and Scandinavia.

Reviewing the wide variety of early education curricula can be unwieldy. In an effort to find a concise but informative method for this section of the study a number of different frameworks were considered. One of the earliest frameworks to assist in the task was that developed by Evans in 1982. This framework was designed to consider different curricula under the sub-headings:

(i) Theoretical Foundation, covering analysis of curriculum and addressing issues such as goal orientation and views of development and learning

(ii) Administrative Policies, considering aspects of personnel, setting and programme evaluation methods and

(iii) Content and Methods, analysing the scope, priorities, organisation, continuity, stability and operationalisation of objectives and practice as either didactic or prepared, individual or group, pre-assessment procedures, motivational procedures, interactional style, feedback procedures, provision for transfer and instructional resources.

In their work on evaluating the components of a school curriculum Pellegrini and Bjorklund (1998) took Evans' approach and refined the third sub-heading to read (iii) Curriculum Content. The sub-headings cover such areas as curriculum goals, school personnel, physical setting, what is taught, how it is taught and assessed. They caution that while the framework offers a theoretical and organisational context within which to evaluate curriculum this must then be validated in terms of the observation of real events.

Having reviewed the framework developed by Evans and modified by Pellegrini and Bjorklund it was decided not to use either of them directly. For the purposes of this section the selected curricula and guidelines will be considered under the three broad headings of Context, Principles and Content/Practice[4]. These headings capture the elements of theory, administration and content identified by the other frameworks while at the same time providing a framework sufficient for the study.

4.3 Contemporary Issues in Curriculum Design:

Defining what exactly a curriculum is in early education is quite difficult (Goffin, 2000). It can vary from the highly prescriptive and detailed US intervention programme Direct Instruction System for Teaching and Remediation (DISTAR) (Marcon, 1999) through to

[4] The element of practice will be further addressed in relation to Ireland in the empirical work of the study presented in the following chapters.

the more general definition given in the New Zealand, Te Whariki curriculum (New Zealand, 1996) where curriculum is defined as '*the sum total of the experiences, activities and events, whether direct or indirect, which occur within an environment designed to foster children's learning and development*' (p. 10). In some cases methodologies are called 'approaches' and quickly become linked to curricula. Such is the case with the fluid and emergent curriculum evident in the Reggio Emilia approach (Edwards et al. 1995) and the NAEYC document on Developmentally Appropriate Practice (Bredekamp & Copple, 1997). Research suggests that '*flexible curricula, built on inputs from children, teachers and parents, are more suitable than in early childhood than detailed, expert-driven curricula*' (OECD, 2002, p. 116).

For this study, in an effort to capture the interactive and integrated nature of content and pedagogy, the curriculum is defined as a conceptual and organisational framework guided by a coherent theoretical foundation which informs decisions about administrative policies, content and practice. Given that children of four-years of age are the focus of this study the material presented is referring, in the main, to early education for children between the ages of three and six years.

4.3.1 Contexts for curriculum design:

There has been a great deal written on the subject of early years curriculum in the UK as a consequence of concerns that the National Curriculum is impacting negatively on the early years (Cox, 1996; David, 1996a; Drummond, 1996 Sylva, Siraj-Blatchford & Johnson, 1992). Many researchers and academics in early education have expressed serious concern that early education is being negatively influenced by the downward extension of the primary curriculum with pressure on practitioners to skill children up in preparation for their transition to school (Abbott and Moylett, 1999b; David, 1999a; Pugh, 1996a; 1996b; Wood, 1999). On the other hand, Rodgers (1999) has been critical of the non-academic approach to early years curriculum development in the UK and criticises the early years lobby, as she characterises them, for relying on a play- based curriculum with insufficient empirical evidence to support this. Anning (1995) concurs with this view and in an effort at guidance proposes that the basic requirement of a curriculum for 3-7 year olds must include:

* Positive dispositions to learn
* A firm grasp of the cultural tools and symbols of literacy and numeracy
* Confidence and flexibility in IT

* Practical hand skills and physical capabilities
* Moral understanding and social/emotional skills
* Intellectual curiosity
* Aesthetic and creative abilities.

In England, where the compulsory school age is five, there has been an increase in the number of four-year-olds, or 'rising fives', attending the reception classes of primary schools. As a result of concern about the appropriateness of this development a number of government reports have been published and new policies developed (DES, 1989; DES, 1990; DfEE, 1997). In a radical departure from the traditional approach the UK has introduced a foundation (pre-compulsory) stage of education. The foundation stage framework is to be implemented in a wide range of settings serving children under compulsory school age including nursery schools, private day nurseries, community preschools, accredited childminders and reception classes. Curriculum guidance for the Foundation Stage was published in 2000 (QCA, 2000) followed by detail on planning for learning (QCA, 2001). The foundation curriculum is not applicable to Northern Ireland but there they have brought in an Enriched Curriculum (Belfast Education and Library Board, 2000) for reception classes in the primary school. This programme, and the foundation curriculum, have yet to be evaluated but do indicate a trend away from the more traditional teacher led approach to the education of four and five year olds.

Rather than stressing early learning goals and desirable outcomes within defined learning areas the New Zealand curriculum, Te Whariki, offers guidance in terms of principles and aims. It provides an integrated curriculum characterised by a tapestry, or weave, of increasing complexity and richness. Such an integrated approach also emphasises the importance of considering assessment as pedagogy. The late 1980s heralded a change in early education in New Zealand. The government decided to place responsibility for all early educational services under the responsibility of the Ministry of Education. Following a period of extensive collaboration across the widely diverse cultural groups within the early education sector the ministry published what has become a highly regarded early years curriculum (New Zealand, 1996; Early Childhood Education Forum, 1998).

Most children in the United States commence elementary school at six year of age although a high proportion of five year olds attend non-mandatory kindergarten. There is limited public funding for early education in the US and the only publicly funded initiative

is the intervention Headstart project. All other services are locally provided and are run as for profit or not-for profit services. While there are a wide variety of programmes run throughout the US the HighScope programme is one of the best known and evaluated and has been taken by certain states as the statewide curriculum (Schweinhart, personal communication). The original HighScope curriculum emerged from one of the earliest intervention programmes known as the Perry Preschool Project. This project forms the basis of an influential longitudinal study which is still reporting and has found long-lasting social and educational effects sustained over thirty years (Schweinhart & Weikart 1997). This curriculum is used in certain settings in Ireland.

One of the most influential early educational programmes to emerge from Europe is that developed by the Reggio Emilia municipality of Northern Italy (Edwards et al, 1995). It is a publicly supported programme and has become known as the Reggio approach (Abbott & Nutbrown, 2001). Developed within the region of Reggio Emilia by Loris Malaguzzi (1993), it acts as a proxy for the type of early education provided throughout Northern Italy and, to some extent, throughout Italy as a whole (Corsaro, 2003). Services offer full provision to children under six years of age in specially built settings and are staffed by multi-disciplinary teams. Children are grouped in mixed age groups with a key teacher for their entire period in the setting and there is close liaison between the early education and the elementary system.

The policy on early education in Norway reflects a particular view of childhood common to most Scandinavian countries. Early childhood is considered a specific phase of life with '*high intrinsic value, and children's own free time, own culture and play are fundamentally important ---- the need for control and management must at all times be weighed against the children's need to be children on their own premises and based on their own interests'* (Norway, 1996). This view of childhood recognises the need for children to develop skills and learning appropriate for later schooling while conceptualising children as a competent learners, discovering and exploring their immediate surroundings and developing confidence in their own abilities.

In their review of different early childhood education and care (ECEC) policies the OECD (2000) note that '*when ECEC focuses primarily on familiarising children with early schooling, there is a risk of downward pressure from a school-based agenda to teach specific skills and knowledge in the early years, especially with regard to literacy and*

numeracy' (p. 41). They go on to point out that it seems that '*if countries choose to adopt a view of the child as full of potential and capable of learning from birth, and a view of childhood as an important stage in its own right, then ECEC provision can be concerned with both the present and the future*' (p. 43).

4.3.2 Curriculum principles in early education:

The UK Foundation Stage identifies thirteen specific principles for practice[5]. They are loosely organised around working in partnership with children and their parents to encourage a sense of belonging for the child in settings which are rich learning environments well organised by trained staff. The principles are accompanied by examples of practice reflecting the principle in practice. Central and local government are responsible for ensuring that services and supports are available for families, services that encourage children's cognitive, social, emotional and physical development and meet parents' need for support for themselves and day care for their children.

The principles underpinning the New Zealand curriculum are presented as part of a complex weave of interacting elements, reflecting the weave of cultures and practices found within New Zealand and captured in the title of the curriculum, Te Whariki, a weave. Unlike those in the UK Foundation the New Zealand principles are brief and less specific. They read that an early years curriculum should:

(i) Empower children (equip them with the tools to capitalise on and extend their learning);

(ii) Take a holistic approach to learning and development;

(iv) Create systematic links to parents and the community and

(v) Encourage and provide responsive relationships. These principles are then linked to aims addressing four interacting strands, each with identified goals.

The aims are to facilitate (i) the well –being of the children (nurture and protect); (ii) belonging for children and their families (iii) communication through reciprocal relationships at all levels and (iv) exploration that recognises active learning as the means for learning, constructing meaning.

Drawing explicitly on the work of Piaget and Dewey the following are the principles that guide practitioners in the HighScope curriculum:

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[5] Details are presented in Appendix 3.

(i) Active learning – through which children construct knowledge that helps them make sense of their world;

(ii) Positive adult-child interactions - central to facilitating active learning;

(iii) A child friendly learning environment - organised into specific interest areas containing a wide range of well labelled materials to support children's interests;

(iv) A consistent daily routine, carefully managed and includes the 'Plan-Do-Review' process which enables children to express their intentions, carry them out and reflect on what they have done and

(v) Team based daily assessment to allow for individualised curricular planning. (Hohman & Weikart, 1995, p. 5-7).

Within this approach learning is conceptualised as developmental change and is characterised as a complex physical and mental process. The role of the adult is to support children in their learning through observation and interaction. The 'plan-do-review' method, developed by the HighScope team and central to their model of practice, was developed with the intention of facilitating the development of metacognitive and cognitive skills.

In keeping with the dynamic, integrated and interactionist approach to young children learning evident in the Reggio Emilia approach it is not easy to find a list of principles underpinning their 'emergent curriculum'. However, in talking about the way in which the curriculum for early education emerges within the social constructivist tradition of development Rinaldi (1995) makes the point that the primary principle guiding the work of Reggio Emilia is the image of the child: '*The cornerstone of our experience, based on practice, theory and research, is the image of the children as rich, strong and powerful. The emphasis is placed on seeing the children as unique subjects with rights rather than simply needs. They have potential, plasticity, the desire to grow, curiosity, the ability to be amazed and the desire to relate to other people and to communicate*' (p.102).

4.3.3 Content and implementation of early years curricula:

The OECD thematic review report notes that several countries identify either subject or learning areas in their curriculum documents. Many of the countries reviewed defined specific skills which children should master prior to school entry including the UK and the US. Denmark and Sweden were untypical and did not identify subject areas or specific

skills (Sweden, 2001). They locate their early education curriculum within the wider curriculum framework for elementary and secondary school and describe principles, which should guide practice across all levels. The OECD report cautions other countries against simply adopting this approach to curriculum design as, without careful consideration, it might lead to a downward pressure from school-based curricula for older age groups, although there is no evidence of this occurring in either Denmark or Sweden. Endorsing the integrated approach found in Scandanavian countries, with early education identified as a clear element in the educational life of the child, the OECD suggest that other countries should consider this approach and surmise that schools might change and '*develop new ways of understanding children's learning across a wider age span*' (OECD, 2000, p.113).

The English Foundation Stage curriculum is organised around early learning goals (QCA, 1999) which are based on expectations for what most children should be able to do by age five. They are organised around six learning areas that act as the framework for planning a curriculum for 4 and 5-year-olds. The areas, each providing a series of expressed learning goals and desirable outcomes are:

(i) Personal, social and emotional development;
(ii) Communication, language and literacy
(iii) Mathematical development
(iv) Knowledge and understanding of the world
(v) Physical development and
(vi) Creative development.

The documentation highlights the development of personal and social skills, early literacy and numeracy skills, cautioning readers that the areas themselves do not represent a curriculum. There is an enhanced and challenging role for the teacher as the author of the curriculum-in-practice. Although evincing sensitivity to the particular learning style and educational needs of young children the foundation stage is not without its critics. The design continues in the tradition of a hierarchical and linear format focusing more on the inputs and outputs of education than on the process. A primary concern expressed is the emphasis it lays on the development of literacy and numeracy skills within the framework of a literacy hour and daily mathematical instruction. Commentators and researchers believe that the positive effects of theoretically sound early education are seriously compromised in practice by simultaneously paying attention to the more traditional emphasis on literacy and numeracy (Pascal & Bertram, 1993; Corsaro, 2003).

An alternative curricular approach has been developed in the UK by the Early Childhood Education Forum and published in their document *Quality in Diversity* (ECEF, 1998). Drawing on the Te Whariki curriculum document from New Zealand they identify 'foundations for early learning' (ECEF, 1998, p. 11). These are titled:

(i) Belonging and Connecting;

(ii) Being and Becoming;

(iii) Contributing and Participating;

(iv) Being Active;

(v) Expressing and Thinking; Imagining and Understanding (p. 12).

Under each of these foundations the Forum has devised a comprehensive list of goals for early learning. The overall work of the forum focuses on the quality of the early learning experience and presents a dynamic framework from within which to work with all young children under five in the UK. (See Appendix 4 for list).

It is difficult to isolate the content of the Te Whariki curriculum as it is embedded within the principles and outlined in terms of learning outcomes associated with each of the identified goals. The learning outcomes describe various skills, knowledge and attitudes recommended for children as they develop through the early childhood period. The framework offers guidance on how the outcomes link in to essential skills and essential learning areas. Given the holistic nature of the underpinning philosophy guiding the New Zealand curriculum, the weave is crafted as a whole rather than being unravelled into specific aims, objectives and outcomes (New Zealand, 1996, p. 93-98). The teacher is challenged to weave together the various strands of talents and dispositions of the young child with the agreed areas of learning within a context that reflects the principles identified as central to a culturally authentic curriculum. There are four guiding principles in the Te Whariki document which reflect a re-conceptualisation of what an early childhood curriculum should include and reflect the assimilation of the more contemporary views of child development emerging from the multi-theoretical understanding of the complexity and context sensitive nature of development and the interactive nature of learning within and across contexts. The curriculum is designed to be empowering, holistic, transactional and ecological (Carr, 1998, p. 2). Such an approach requires a review of pedagogy and assessment. In practice the learning and assessment of learning are integrated into the overall pedagogy with teachers documenting development, assessing its

meaning and deriving curricular guidance from reflecting on their engagement with the children and their evaluation of the considerable and varied documentation maintained.

It is in New Zealand that the concept of learning dispositions in early education has most recently been elaborated and researched (Carr, 1997, 1998, 1999, 2001a, 2001b). Carr has linked the development of certain learning dispositions to the Te Whariki curricular framework. These include: courage (and curiosity) to find something of interest here in the learning community (Curriculum Strand – Belonging); trust that this is a safe place to be involved, focusing ones attention, and encouraging the playfulness that often follows from deep involvement over a period of time (Curriculum Strand – Well-being); perseverance to persist with difficulty or uncertainty (Curriculum Strand – Exploration); confidence to express an idea or a point of view (Curriculum Strand – Communication) and responsibility for justice and fairness and the disposition to take on another point of view (Curriculum Strand – Contribution) (Carr, 1998, p. 4)

The content of the HighScope curriculum is presented in the form of fifty 'key experiences' or statements describing the social, cognitive and physical development of children between the ages of 2.5 and 5 years. The 'key experiences' are clustered under topic headings which reflect their Piagetian origin: creative representation; language and literacy; initiative and social relations; movement; music; classification; seriation; number; space and time. The task of the adult is to provide an environment in which these key experiences can occur, to recognise and support them and then to build on them with the child.

In the US the document on developmentally appropriate practice (DAP), published by the National Association for the Education of Young Children (Bredekamp, 1987; Bredekamp & Copple, 1997) has had a huge influence on practice and the implementation of curricula. There has been some debate as to whether or not this document should be considered a curriculum. Goffin (2000, 2001) argues that it is not a curriculum but is a methodology. While this is certainly true the document has a very clear theoretical context and raises the issue of the close, interwoven, relationship between pedagogy and curriculum in early education. Indeed Roopnarine and Johnson (2000) include DAP as an early educational model or approach and Rodgers (1999) refers to the DAP as a curriculum, reflecting the blur that exists in early educational discourse between the content of the curriculum and its

implementation. Such a blurring could be advantageous, enriching and challenging for early education and can be seen at its best in the Reggio approach.

There is no written curriculum for early education in Reggio Emilia. Rather the focus of attention is on projects and activities, which act as the content around which early experiences are designed and extended. In the early years settings of Reggio Emilia where children are educated together from birth to six, they speak of the 'hundred languages of children' meaning all the different ways in which children can communicate and through which they can express themselves (Edwards et al, 1995). Children do not spend time in formal classes developing literacy or numeracy skills: instead their interest and curiosity is used by the teachers as a key to their learning. The processes of exploration, experimentation, discovery, representation, transformation, interpretation, creation and evaluation are foregrounded for attention and expression by the teachers, mostly through the use of project work through the arts. Pedagogical practice in Reggio is dependent on the social constructions based on assumptions and experiences of both adults and children. In order for teachers to be able to respond appropriately to the children they build in opportunities for reflection and maintain rigorous quantities of documentation that they use as a basis for their reflection; a form of continuing professional development. Teaching decisions are made, not on the basis of a prescribed curriculum, but on the basis of evidence and experiences that have been analysed.

The important content of the Reggio Emilia approach is not the content of the curriculum but the content of the relationship. The content is not focused on routine and management but on the work in hand. Shared activities are considered something that is valuable to both children and adults. The benefits of this approach are the active engagement of children in the learning process and the active engagement of the adult in teaching for learning: they are, to all intents and purposes, the 'proximal processes' or engines of development that are crucial to the development of generative dispositions in the child. The teachers' role is key as there is no prescribed content but rather that which emerges from the task which becomes a shared curriculum where the problem has to be set and then solved. This approach allows for rich developments in skills and knowledge in a dispositional milieu which is encouraging learning dispositions meeting the values of the community.

There has been a lot of international interest in the Reggio approach and many authors have written extensively about the principles and practice (Abbott & Nutbrowm, 2001). Gardner (1995), in his Foreword to *The Hundred Languages of Children,* cautions that one cannot transpose something like the Reggio Emilia approach to another country without adapting it appropriately to that culture. He does, however, recognise the approach as valid and appropriate for young children and notes that Reggio Emilia '*epitomises ... an education that is effective and humane: its students undergo a sustained apprenticeship in humanity, one which may last a lifetime'* p. xiii.

Katz (1995c) notes the importance of creating a sense of belonging, of relationship, in young children and points to the rich content that such relationships can have. For relationships to be effective they must be about something, to allow for engagement by the child and the adult and to allow for feedback and for guidance. The relationships described in the various reports from Reggio Emilia are akin to the reciprocal scaffolding proposed by Lambert and Clyde (2000).

Katz suggests six lessons to be learnt from Reggio:

1. Children and teachers together examine topics of mutual interest in depth and detail and using a variety of media and approaches
2. When children are engaged in this way they attend to their work with great care. The work is a form of documentation of the process of their learning which they evaluate as well as the adults
3. Early introduction of observational and representational skills does not deter their creativity
4. The work in the projects provides rich content for the teacher-child interactions
5. Many features of the adults behaviour convey to the children that all aspects of their work is taken seriously
6. The driving force behind the principles for the programme is community/family rather than industrial/corporate (1995c, p. 36/37).

One of the most striking features of the Reggio approach is the willingness of the teachers to learn, not just from each other, but from the children as well. Claxton (1990) argues that 'good teachers' in the traditional sense may maximise training procedures which enable pupils to succeed at tests, examinations but it is teachers whom he calls 'mentors' who equip their pupils to be good learners because these 'good learners' are resourceful,

creative and persistent and intelligent in the face of change. Reggio practice is not based on the notion of teaching as applied child development: it demands of teachers a clear view of what interests children, what children are doing, what is being offered as their learning environment, materials, interactions and context (Hirst, 2001; Moss, 2001). Practice is not the application of a curriculum within a particular pedagogical formula; it is responsive and fluid and acts as the basis for an emergent curriculum.

4.3.4 Summary:

There are many different models of early education and this section has taken a sample to illustrate the differing contexts in which curricula develop, the principles that drive such developments and the content and practices that emerge.

The examples were chosen because they are current, well documented and influential. They also illustrate different policy and theoretical approaches to early education. The curriculum models and pedagogy developed in New Zealand and Italy, and those which have been popular for many years in Scandinavia, are presented as being more in harmony with our current understanding of the complexity of early learning and the challenges to pedagogy than the models from the US and the UK. While none of the models is directly transposable to a different culture they all provide useful frameworks against which to judge developments and practice in Ireland.

4.4 The Learning Environment:

The micro-system of the classroom can influence the type of learner a child will become from an early age (Ames, 1992; Carr, 1998; Dweck, 1999; Dweck & Leggett, 1988; Resnick & Nelson-Le Gall, 1997), and shape positive learning habits, learning dispositions and a sense of learner identity (Katz, 1993; Carr, 1998, 2001b). Classrooms that encourage learning over performance may be those where the environment and activities are characterised by optimum challenge, open-endedness and flexibility, where errors are supported as part of learning (Ames, 1992; Carr, 2001a; Dweck & Bempechat, 1980; Elliot & Dweck, 1988; Heyman et al., 1992 Marshall, 1992). Children who are encouraged to think of themselves as learners, rather than performers, are more likely to face challenges constructively, to apply metacognitive skills when presented with problems and to trust feedback as a guide to their further activity. This suggests that feedback from the learning environment must be clear and explicit, articulating the features of the context including the task, the process and the wider environment.

In their research into motivation and belief systems in learners Elliott and Dweck (1988) studied the degree to which the learning environment influenced children's learning styles. They manipulated classroom environments to shape pupils towards performance or learning goals and found that children encouraged towards mastery chose challenging tasks when given the choice whereas children oriented towards performance chose the easier tasks. In addition, children who were encouraged towards performance orientation showed additional 'helpless' attributes such as poor confidence in their problem-solving abilities and learning strategies although there was no evidence that they were originally any more inclined to helplessness than those encouraged towards mastery.

Positive learning environments are characterised by close positive interactions between children and between adults and children (Anning & Edwards, 1999; Carr, 2001a; David, 1999c; Katz, 1996). They provide opportunities and activity options, which emerge from the interests and cultural experiences of the children. Learning opportunities are challenging and require active engagement. Cleave and Brown (1991) recommended from their research that classrooms for four-year-olds should be equipped with material to encourage active learning. Materials should be of good quality and of a range to meet different levels of ability and experience. They should provide opportunities for multi-disciplinary activities and individual progression while reflecting the culture of the classroom and the wider community. They suggest that materials available to children should be natural, creative, constructional, domestic and role-play, table-top, musical and sound making, listening and books, special interest and outdoors.

4.4.1 Locating early education:

While there have been a variety of studies investigating the importance of the design and atmosphere of the learning environment to young children's learning there has been relatively little written on whether early education should occur within the school environment or in separate, specially designed, settings. In some countries such as Denmark, Sweden and Italy there are separate early educational facilities designed for children up to the age of six. These buildings are often located in the vicinity of the local elementary school but are separate institutional entities. In the Netherlands four-year-olds attend kindergarten, often located within the elementary school building but designed as a play space rather than an academic classroom. In the UK there are some separate nursery

schools for this age group but increasingly four-year-olds are attending the reception classes of primary schools.

Kagan (1987) considers the issue of the location of early education for older preschool children from three perspectives: the physical, the philosophical and the pedagogical:

(i) On the physical side she notes that schools are readily available: education is their mission and they have professional standing. If, however, schools are to provide appropriate early education for young children, they need to become more flexible in their scheduling, offering a range of options to meet the differing needs and demands of younger children and their parents and the role of the school in the community needs to be reassessed.

(ii) From the philosophical perspective Kagan argues that an emphasis on equity for all children, which underpins many of the intervention and compensatory projects developed within early education, leads to a standardisation of services with the pragmatic intention of providing 'good-enough' early education within existing constraints rather than aiming for an ideal that is high quality but more expensive. Within this philosophical tradition the focus is on outcomes rather than processes and the education is less likely to meet the individual needs of young children as competent and creative learners (Corsaro, 2003, Marcon, 1999). In terms of long-term gain the pragmatic approach is not as cost-effective as it might at first appear.

(i) From the pedagogical perspective Kagan identifies the distinction that is drawn between care and education as important. Care is something that schools consider outside their remit while education and learning is what happens in school. Early education provided in school settings focuses on traditional aims such as getting children ready for formal school. Those working in elementary schools are trained for elementary instruction and advocate more emphasis on academics, on the grounds that even preschool children are able to learn and enjoy the intellectual stimulation of learning.

Early educational settings outside the elementary school come from a different tradition where care and education is seen as seamless. They tend to be oriented towards the principles of child development rather than towards outcomes, with less emphasis on structured academics. Educators advocating a child development position fear that under

the rubric of readiness and school preparation, not enough attention will be paid to wider cognitive processes and to helping children foster dispositions towards learning such as motivation; curiousity, playfulness, inquisitiveness and spontaneity. As previously discussed this tension between a traditional academic view of early education and a child development view mirrors the distinction made by many between education and care in early education.

Sigel (1987) concludes that there are good reasons for children to experience appropriate early education prior to elementary school entry. He highlights the benefits that can be achieved in early education settings without children being subject to undue stress or being deprived of important developmental tasks such as playing, exploring, coming to understand the world around them and fulfilling their emotional needs. He cautions, however, that if early education is seen simply as an accelerating process, the legacy of initiatives such as Headstart where children are pushed to be 'little performers', then we may be creating anxious, stressed children (p. 144/145). This view is supported by others, such as Elkind, (1988, 1994) and Zigler, (1987), who argue that where early education is modelled on the principles of elementary education we may be driving our young children too hard and depriving them of their childhood. Premature schooling replaces valuable playtime, potentially slowing or reducing the child's overall development and this is a '*danger given the present cognitive thrust of education, increasing the possibility of an overemphasis on formal and highly structured academics*' (Zigler, p. 35). This concern has also been expressed more recently in relation to the situation in the UK where the National Curriculum has been found to have had negative repercussions on early education and the experiences of young children (Mills & Mills, 1997; Sylva, Siraj-Blatchford & Johnson, 1992; Wood, 1999) with teachers attempting to 'teach' to the contents of the curriculum and parents pressurising teachers in early education to teach more formally.

In his review of educational practice in primary schools Sugrue (1990) notes that while Irish researchers (Archer & O'Rourke, 1982; Fontes & Kellaghan, 1977) have reported that informality in teaching practice is more prevalent in the infant classes the question remains as to whether it is sufficiently informal. He writes that '*the available evidence strongly supports the thesis that primary teachers believe the child is central to the educative process. There is little evidence to suggest, however, that this has resulted in widespread use of informal teaching methods*' (p.19). In fact, Sugrue's review highlights the formality of primary teaching and his synthesis of different research findings suggests

that teachers consider that informality makes heavy demands on the teacher. At the same time teachers do acknowledge that it facilitates teaching pupils to think for themselves and allows them develop their full potential.

4.5 Play in Early Education:

There is an understanding that young children function in an integrated way and a traditional value, in early education in particular, for teaching in a holistic way, meeting the needs of the 'whole' child. Teachers of young children know that they learn about the world and learn to solve problems when they play and that play is their way of experimenting with new ideas and practicing skills. Wood (1988) notes that while learning is a direct product of the child's interactions with the environment the adult in educational settings has a critical role in 'contriving' interactions in response to certain, explicit educational goals. Such planning is informed by our understanding of the fact that young children learn through play, observation, asking questions, experimenting, making sense of the world and through suggestions, hints, warnings, conversation, shared practical tasks and reminiscences.

Play is one of the many paths to learning for young children and research into children's play has contributed to our understanding of how they develop (Bruner, Jolly & Sylva, 1985; Dockett, 1999; Moyles, 1988, 1994). Some researchers have argued that play has not actually been proven as the pre-eminent vehicle for young children's learning (Smith, 1986). The evidence of how play impacts on early learning is difficult to identify but there is overwhelming agreement that play is a powerful medium through which children learn. It is too difficult to isolate the causal link between play and learning but reviews of the importance of play in early education (Bruce, 1991, 1997; Moyles, 1994; Pellegrini & Smith 1998; Smith, 1986) all point to the value of play in the learning of young children and Sayeed and Guerin (2000) make a cogent argument for considering the importance of play in early educational interventions for children with additional needs. While ideologically the case for play is strong (Abbott, 1994; Bennett, Wood & Rogers (1997) some authors argue that the empirical research showing why it is so valuable is limited (David, Aubrey, Anning & Calder, 2003; Rodgers, 1999).

Research from different approaches to early education indicates the importance of teaching that allows children themselves to direct and make decisions about their learning based on, among other things, their interests and past experiences. The recognition of play as a

pathway to learning has been evident in early education literature from the first writings in the field. It is through play that children interact with, explore and extend their environment to gain in their understanding and mastery of it, influencing both their affective and cognitive development. The importance of play in early education is widely acknowledged in Ireland (Carswell, 2002; Hayes, 1995; Hayes et al., 1997; Ireland, 1999a, 1999b). For instance, the curriculum for the infant classes is *'based on the uniqueness of the child and the particular needs of individual children at this stage of development. The informality of the learning experience inherent in it, and the emphasis it gives to the element of play are particularly suited to the learning needs of young children.'*(Ireland, 1999c, p. 30) The theoretical endorsement of play and the informality of learning experiences in the early years is not always evident in observed classroom practices (Hayes et al., 1997; Horgan, 1995; INTO, 1995). This finding is not unusual and concern has been expressed among early educationalists that primary teachers may underestimate the value of play and view it in opposition to the formal education, the 'real work' of the classroom. Where play is used, it is often as a reward for work well done or as a means of introducing elements of more formal education in an'interesting' way. Glassman and Whaley (2000) use the example of teachers using cars and ramps to introduce children to the concept of gravity or the relationship between mass and speed. This approach to using activity or play to teach to the prescribed curricular or adult aims is the type of practice that Dewey (1916/1944) considered 'soft', and informed by a 'soup kitchen' theory of education. Glassman and Whaley suggest that this tendency shows a poor understanding of the potential of play as the transparent immediate activity of the child while work could be considered in terms of the adults' creation of a context to facilitate the child's education.

It can be difficult to teach through a play-based curriculum in the face of pressure for formal reading, writing and arithmetic and beliefs that the earlier one starts the better the child will be in literacy and numeracy, in spite of claims to the contrary. It is not content that is necessarily the problem but how it is taught and the appropriateness of the chosen approach (David, 1999b; Bennett et al, 1996). Arising out of the *Structuring Play in the Early Years* project in the UK (Manning & Sharp, 1977) three key prerequisites for the successful use of play were identified:

(i) Space, with areas arranged for particular forms of play, thus imposing a type of structure onto play

(ii) Time where the amount of time allocated to play can structure the extent to which children can play and

(iii) Materials, as children's level of play at school depend to a certain extent on the materials and equipment available to them.

4.5.1 Defining play:

Studies of practice suggest that early years teachers need continued professional support, which encourages discussions based on children's play and their own provision and assessment of this, to assure achievement and progression in children's learning. Bennett, Wood & Rogers (1996) conclude from their review of research that the rhetoric of play does not appear to be realised in practice. They blame the disparate ideologies underpinning play for the lack of a unified theoretical and pedagogical knowledge base to guide practice and argue that if play is to be used for more clearly defined educational purposes then the quality of play will have to be improved. Their research found that central to teachers' theories of play was a clear distinction between work and play. Daly (2002) in her study of the views of Irish teachers on aspects of early education found wide variation in the use of unstructured or free play, structured play and drama or make-believe play in infant classes.

The language of play can be confusing and contradictory and there are different views about what exactly play means, particularly in the context of education. Is it free choice or is it experiential activities structured by an adult? There are several different definitions of play reflecting contrasting approaches to its study. In an effort to synthesise the information Sayeed and Guerin (2000) suggest that definitions of play are best considered as either process-led or product-led. Process-led definitions of play attend to aspects of play such as its role in fostering intrinsic motivation, enjoyment, learning, happiness and interactions in context. Product-led approaches, on the other hand, attend to its role in the development of thinking, motor activity, behaviour and preparation for the future.

One could argue that over-definition and overuse of the term 'play' has diminished its value and trivialised it to the extent that it has come to mean everything and nothing. In this way its value as an integral part of the early education curriculum is weakened. In fact play can have a dual role in early education. It can provide opportunities for children to explore and learn at their own pace and it can be a very powerful pedagogical tool for the teacher who, through observing play, can plan future opportunities for learning (Hayes, 2003a). Through play in a nurturing environment, children develop a model for interpreting the world and their experiences in it. They learn how to negotiate the rules

and requirements of their immediate world and make sense of that world. They learn how to learn. It is learning to make sense of the world that dominates early childhood education and characterises it as different from other levels of education. Adults have an important role in creating an environment for the children to facilitate this process.

Hutt and colleagues (1989) in their study of play and learning proposed that play be considered as having two elements – exploration and play. Exploration is knowledge based play; it answers the question 'what is this?' and they call this 'epistemic' play. When the exploratory phase is exhausted children move on to the play phase which is symbolic/representational play and which addresses the question 'what can I do with this?' and this is termed 'ludic' play. The role of the adult varies according to the type of play and is likely to be directly involved in epistemic play and more observational in ludic play. This rich view of play as exploration and learning reflects Dewey's position on the role of play in education. Building on the recognition of the child as an explorer the teacher can attend to the opportunities that will arise to guide the child's understanding of problems and their solutions. This presents opportunities for the child to construct or co-construct knowledge in activity rather than simply receive information from instruction. Progressive early childhood ideals for learning through play, contemporary emphasis on life long learning and the role of early education in cultural transmission have all influenced the study of play in early education. But there is another element of the study of play that is attracting attention, playfulness. Attention to the idea of playfulness is not new; Dewey (1902/1956) noted that playfulness rather than play itself was important to children's learning. In research on learning dispositions in early education playfulness has been identified among the dispositions to be fostered (Carr, 2001b, 2002; Claxton, 1999a). Playfulness ensures that play is a self-motivating and enjoyable process leading to learning. It encourages experimentation and de-emphasises the need to be perfect. It builds self-esteem. Playful children are curious, ask questions, take time to explore, try to understand, use prediction to form, test and evaluate ideas. However, the pressures of primary like curricula in early education act as barriers to the development of playful learners (Parker-Rees, 1999).

4.5.2 Relationships in play:

Play provides an opportunity for adults to interact with children and understand their world to support their learning and development. The child is influenced by the experience of play but also influences the environment through play. Adults can facilitate and support

play for the child and play with the child but also use play, through reflective observation, to plan for the child, to snapshot the dynamic development of the child. Through reflective observation adults can extend and enhance the child's play and learning. Sylva et al (1980) evaluated play according to the degree of cognitive challenge and found that cognitive complexity was associated with a greater degree of adult interaction. Play is common to a wide range of activities and can be a valuable source of information on children, a valuable basis for assessment. The idea of an interactionist approach to assessment, or assessment as pedagogy (Carr, 2001a) allows for recording children's current level of functioning, through reflective observation, rather than measuring it against a norm; acts a basis for programme planning and/or intervention and acts as a method for evaluating change and the impact of the programme or intervention (Moyles, 1988; Sayeed & Guerin, 2000) It emerges from a socio-cultural perspective.

As well as the socio-cultural dimension, play has a developmental dimension as proposed by Pellegrini & Bjorklund (1998). In their consideration of continuity in development they identified heterotypic continuity where a particular behaviour at one age can be related to a different but related behaviour at a later stage. The example given is make-believe play at age three with its emphasis on representing the world with different toys as linked to reading at a later stage where symbols are representative. The point here is that facilitating this type of play has a legitimacy and appropriateness in terms of literacy that the early introduction of pre-reading skills may not. Similarly, in science teaching, activities can be planned to allow for the use of Hutt's model of epistemic and ludic play where environments are created to allow children explore and ask 'what does this do' and move from this to the creative, ludic phase of 'what can I do with this' using the knowledge they have gained through their learning.

Bruce (1991) has argued that play is important in the early years because of its integrating function, that is, through play children find out new information, re-arrange old knowledge, integrate and practise in play and through this process they learn more about their world. In her later work (Bruce, 1999) she describes the rhythms of play, their ebb and their flow and notes that '*play is not a static equilibrium or a steady state. It keeps changing according to the time of day, the situation and the people*' (p. 37). This dynamic is also celebrated by Drummond (1999) in her call for a recognition of the real importance of play in children's lives and learning where she describes how 4 to 6-year-olds can become engrossed in complex and collaborative play which challenges and strengthens

their learning. Gardner (1993) challenges educators and parents to reconsider childhood if we are to enable the development of different intelligences. This calls for a reconsideration of what kind of knowledge and skills are valued, a broadening of our concept of what knowledge is important and what behaviour is intelligent and how both are assessed to uncover other intelligences previously overlooked (Lyons, 2002). To achieve this '*we need to throw out limiting old assumptions and respect the flexibility, creativity, adventurousness, resourcefulness and generativity of the young mind*' (Gardner, 1993, p.107). Providing the space, time, materials and encouragement for play, as part of the education of young children, is one place to start.

Pellegrini and Blatchford (2000) note the importance of play in schools and the potential for social and educational benefits of well-supported play opportunities for children. They caution, however, that increasing pressure on teachers to meet the requirements of increasingly crowded curricula (a point reiterated by Morgan (2002) in the Irish context) limits the time allocated for meaningful play. For it to be legitimised, meaningful and effective in any social or educational goals, play must be a named element of the curriculum.

Under the Rules for National Schools, which cover all aspects of school functioning in Ireland, there is limited reference to play. Under the section on length of day the rules define a minimum day as five hours and forty minutes. Within this time it is recommended, but not obligatory, that there be a recreational period of 30 minutes and two five-minute breaks, one in the morning and one in the afternoon. Anything further in the line of play provision must take place in the context of an extended day. Neither of the Acts governing schools, the Education Act 1998 (Ireland, 1998b) and the Education (Welfare) Act 2000 (Ireland, 2000b) makes any direct reference to play. The *White Paper on Early Education* (1999a) has some limited references to play in education noting the importance of learning through play for young children (p. 56) but not elaborating the point. The Irish *Primary School Curriculum* (1999b) recommends the use of play in teaching and suggests play as a methodology to be used by teachers in all areas of the curriculum at all levels but is identified as most effective at the junior and senior infant levels.

4.5.3 Reconceptualising pedagogy in early education:

Recognising the child's part in the process of learning, compatible with the rise in attention from psychological, sociological and rights research (Hayes, 2001; David, 1999b) requires

a shift in pedagogical approach from the traditional didactic approach of the classroom and the more 'laissez-faire' approach of activity based settings towards what Bruner calls a 'pedagogy of mutuality' (1996, p. 56) Such a pedagogy presumes that all minds are capable of holding ideas and beliefs which, through discussion and interaction, can be moved towards some shared frame of reference. '*It is not simply that this mutualist view is 'child-centred' but it is much less patronising towards the child's mind. It attempts to build on exchange of understanding between the teacher and the child: to find in the intuitions of the child the roots of systematic knowledge, as Dewey urged'* (p.57). The importance of shaping and nurturing such learning dispositions to assist the development of critical thinking is now becoming a central issue of debate in relation to early educational pedagogy (Carr, 1998, 2001a; Katz, 1995; Resnick, 1981, 1987; Resnick & Nelson-LeGall, 1997). The development of generative learning dispositions is largely about learning to recognise and search for opportunities to apply one's abilities. Quality early education environments provide such opportunities and the adult has a key role in shaping disposition through careful observation of children to identify and respond to the emerging dispositions particular to individual children at particular times and in particular contexts. Feedback to children from the learning environment needs to be clear, explicitly articulating the features of the context, the task, the process and their function in it.

It follows that the role of the adult in early education is central to the effectiveness of this pedagogy. The role of the early years teacher is multi-layered (Athey, 1990, Bowman et al, 2001; ECEF, 1998; Spodek, 1996). Analysis of the various tasks of a nurturing educator one finds a group of functions, which fall into management and educational roles, which are intricately interconnected in practice. The management role of the teacher encompasses planning for children's learning, resourcing and organising opportunities for learning; recording and documenting children's learning and evaluating practice and adapting to the interests and needs of children. The educational role of the teacher involves reflective observation to inform practice, supporting and extending learning in groups and with individual children, understanding what is happening as children learn and responding to this understanding and working in partnership with other adults and children themselves in the process that is early education. Bowman and her colleagues (2001) expand on the importance of the adult in early education, particularly identifying those characteristics to be developed through training. Well trained teachers are confident in their knowledge of child development and familiar with the skills and knowledge appropriate to the age group in their setting; they are careful and sympathetic listeners and

respectful to children; they negotiate meaning rather than impose it; they are reflective observers who are able to adjust to children and provide sensitive feedback. (Abbott & Moylett, 1999a; Carr, 2001a; David, 1999b; Katz, 1996; Nutbrown, 1996; Schon, 1983). Such practices are the manifestation of the 'nurturing pedagogy' proposed at 4.2.2 and embody a trust in the educative vale of care in early education.

Teachers who practice in this way teach in a content-rich environment but do not pretend to have all the answers; rather, they help the child to find their own. Where early education has too strong a knowledge or content focus, emphasising the need for children to know facts before they can apply their learning effectively, teachers may become uncertain in their role and believe that they have to be the fount of all knowledge. Katz (1996) notes that in her experience it is this belief that makes student teachers very anxious, and can lead them to focus their efforts at preparation and planning rather than thinking about appropriate teaching and learning strategies. She makes the point that teacher education, for the early years in particular, must help students distinguish between know-how and knowledge in a way that allows the integration of both. Recognising the centrality of pedagogy, as well as curriculum, to effective early education is a challenge and requires extensive knowledge accompanied by a trust in the ability and interest of children to learn. In order not to become 'paralysed by uncertainty' teachers of young children must be able to teach with optimum confidence in the rightness of their actions based on robust evidence of child development (Katz, 1996, p.145). However, she continues that they ought also be imbued with a healthy scepticism and an ability to question their own practice.

In a provocative and influential article Alexander, Rose & Woodhead, (1992) argued against this view, asserting that teaching is not applied child development. David, Curtis & Siraj-Blatchford, (1992) have expressed serious concern with this view and the tone of the article. David (1999a) has argued that the assertion has had a profound and negative effect on early education practice in the UK and links it to the resulting downgrading of child development as a subject in teacher training. Johnson (1988) believes that all teachers come to their practice with informal theories about children's learning and development, informed by their training and their experiences. They derive these from experience and often own them much more readily than they accept the implications of theory and research from so called child development experts. These implicit beliefs that teachers have about child development and how children learn are termed 'folk pedagogy' by

Bruner (1996) and do need to be challenged in the context of contemporary understandings. Training for early education must include a strong element of child development along with subject knowledge and principles of practice.

Teachers also learn from the children they work with just as surely as children learn from them and it is reflection upon that knowledge that allows teachers to respond effectively to individual children. Teaching is a dynamic enterprise and as groups and group dynamics change so does teaching and this is part of its reward. Theories of practice change over time and teachers cannot embrace one theory to underpin practice to the exclusion of an understanding of the dynamic of the group. '*No matter how well thought out an approach or instructional plan may be, or how well it seems based on theory, teachers must constantly test their theory-based ideas in the real world. Teachers in this sense are as much researchers as anyone else. Together with other early education professionals they are or should be active participants in 'experimental pedagogy*' (Johnson, 1988, p.17/18).

There is no doubt that a shift to informal teaching practice does require a significant shift in approach away from the more traditional style of teaching. Dewey (1938/1998) and others (Bruner, 1996; Carr, 2001a; David, 1999a) have noted that the more informal the pedagogy the greater the need for a formal structuring of the learning environment. This structure does not require a particularly ordered or rigid routine or environment. It can be expressed in practice through carefully informed and reflective planning from a rich knowledge base. To effect a significant change in teaching practice will require a significant review of and investment in pre-service and in-career teacher training (Coolahan, 2002; Dunphy, 2000; Ireland, 2001; McGough, 2002; Sugrue, 1990).

4.6 On Being Four:

This study is concerned with the classroom experiences of Irish four-year-olds in the junior infant classes of the primary school. Historically there has been little debate about whether or not four-year-olds are appropriately placed in primary school classes. As far back as 1981 (Máirtín, 2001) there was a political move to raise the school entry age from four to four and a half. For a variety of reasons, among them the lack of any early educational alternative for four-year-olds, this suggestion was quickly rejected. More recently the hosting of a National Forum on Early Education (Ireland, 1998a) and the publication of White Paper, *Ready to Learn* (Ireland, 1999a), has refocused attention on the debate.

Ireland is almost unique internationally in having a stated commitment to educating four-year- olds within the primary school system. The debate about whether or not four-years-olds are best served by attending primary school can be considered from the perspective of the child – what do we know about the way children of this age learn – or from the perspective of the learning environment – should children of this age be 'at school'? The issue is also of concern to those in England and Northern Ireland where, for a variety of reasons, the numbers of four-year-olds attending reception classes is increasing. According to a number of authors the single most educationally vulnerable group of children under five, in terms of later school and social success, has been identified as the four-year-olds in reception classes (David, 1990; Mills & Mills, 1997, Pugh, 1996b).

Of particular concern is the risk that introducing formal academic or direct instruction in the early years may jeopardise the development of desirable dispositions (Carr, 2001b; Katz, 1993). As the review of research has shown there is no compelling evidence that early introduction to academic work guarantees success in school in the long-term. There is, however, reason to believe that, because of cumulative effects, early introduction could work against development of desirable learning dispositions. Emphasising the skill of reading, for example, might thwart the development of the desire to become a reader (Katz & Chard, 1994, p. 31).

This study addresses the experiences of four-year-olds in school, specifically in junior infant classrooms. Irrespective of one's theoretical stance there are some points of consensus on what one might expect from the 'average' four-year-old. Any curriculum for young children will be developed and modified according to what people in a society believe it is appropriate for them to learn. This will depend on their views of early childhood, the position of children in the society and the kind of people the society wants children to become (Bowman, et al., 2001; David, 1996c; Hayes, 2002; Ireland, 1999a). With respect to the early entry age (four years) of Irish children to primary school, some concern has been expressed that there is still an unconsidered belief that children only start to learn when they go to school (Hayes, 1998; Ireland, 1999a). This concern has also been expressed by Maxwell (1996) who wrote of the widespread belief that '*school is the place for learning how to read, write and do sums, that this will begin to show soon after entry, irrespective of whether children are four, five or six*' (p. 3).

Four-year-olds have limited experience of the world, they have only had 48 or so months experience before they enter school or 0.8 of the experience of a 5 year old. Cleave and Brown (1991) investigated whether teachers and policy makers consider four as a distinct age and stage. They found some disagreement among their sample as to whether specific, identifiable needs of four-year-olds could be usefully distinguished. Even among those who agreed that one could distinguish such needs, a sizeable minority of respondents resisted making categoric statements about four-year-olds preferring to refer to the needs of children from 3-5 years or 2-6 years. Most of this group held the view that it was more productive to consider the period of early education in general rather than a one-year group in particular. In line with this, most Irish reports and policy documents rarely consider educational groups by year alone. The field of early education is seen as referring to the educational needs of children from birth to 6 years. Within this age range two bands have been distinguished; 0 to 3 years and 3 to 6 years (INTO, 1995; Ireland, 1998a; Ireland, 1999a). This distinction has been defended as necessary to take account of the care needs of the younger age group (Ireland, 1999a) and is often qualified by reference to the need to streamline policies and practices and supports so that the negative effects of discontinuity in transition are minimised.

There is a consensus that young children learn a great deal more than skills and knowledge in their early years. They also learn to be independent, to regulate their behaviour, manage their experiences and plan and direct their interaction with others and with the wider environment. Between three and five years of age children learn about social relations and about belonging to groups, they recognise difference and are challenged by novelty, they develop skills of joining in, negotiation, including others, caring for others, managing disappointments. They extend their understanding of who they are, the extent of their skills, their possibilities. In their relationships with others and the environment they come to understand what they have to contribute, how to cooperate, to handle failure and to make amends. They can express themselves in a wide variety of ways, experimenting with materials, sounds and physical skills. Their thinking is scientific and moral, they are learning to hypothesise and to investigate. They are interested in understanding how they think and in managing their thinking skills, they are curious, they explore, pursue interests, attend for long periods and persist at activities that interest and challenge them (Anning, 1997; Bronson, 2001; Cleave & Brown, 1991; ECEF, 1998).

Carr (1992) in a well-referenced review of the literature points to a consensus on the special nature of the older early childhood age group. She outlines this special nature by reference to their skills, knowledge and attitudes. In contexts that make sense to them they develop skills which include sensitivity to a wider social world, they are better able to take others points of view, engage in reciprocal interactions, conversation and accommodate the feelings of other in play. Within their understanding of the wider world they make predictions about elsewhere, reason, problem-solve and think about the world and their place in it. They are able to symbolise and represent, engage in disembedded thinking, complex language skills and application of number and spatial skills. They are humorous and enjoy jokes and storytelling. Their base of content-knowledge is expanding as they acquire increased vocabulary through wide ranging interests, activities and interactions working out from themselves, the group to the community, culture and wider world. They are developing a sense of personal responsibility, competence and group responsibility. They are learning how to judge what is worthwhile and recognise what behaviours are valued and respected.

Bronson (2001) warns that early childhood educators need to hold fast to these understandings of the older preschool child in the face of increasing demands for 'academic standards' within early childhood classrooms. It is not, she points out, that young children cannot or should not learn letters and numbers and concepts of science; they can and are interested in these concepts if presented appropriately. However, long periods of teacher instruction and longer periods of filling out worksheets at desks or tables are not the most effective means of supporting learning or a love of learning at these ages.

For the older preschool child, particularly in Ireland, early education is often characterised as primarily a preparation for school (Bowman et al., 2001; Ireland, 1999a, 1999b; QCA, 2000). There are limitations to considering early education as a preparation for school; most particularly it can boundary our expectations of young children and of how effective early education can be. Research indicates that early education that is appropriate to the learning styles of young children can have profound and far-reaching effects on attitudes to, and expectation of, learning across the lifespan. One can conclude from research findings that it is through their experiences and their understanding of those experiences that children develop an identity as either resourceful learners or as more passive performers (Ames, 1992; Dweck, 1999; Resnick & Nelson-LeGall, 1997).

4.6.1 Four-years-old in Ireland - curriculum and practice:

There is no national curriculum, or practice guidelines, for early education in Ireland at the moment, apart from the infant section of the *Primary School Curriculum* (1999b). The National Council for Curriculum and Assessment (NCCA) is currently working with the sector to develop a framework for early learning, which will provide guidance for all those working with children from birth to six years of age. Given its brief this document will overlap with the current primary school curriculum in respect of four and five year olds.

The national curriculum for primary schools in Ireland was revised during the 1990s (Ireland, 1999c). In line with the recommendations of the Quinlan Report (1990) the revised document represents an evolutionary change from the 1971 'New Curriculum' rather than a revolutionary change. The really revolutionary shift in Irish primary education came with the publication of the 1971 document, where the child was identified as central to the educational process and this commitment to a child-centred approach has continued in the revised curriculum (Bennett, 2002). In a review of the child-centred nature of the 1971 curriculum Sugrue (1990) makes a good case that the curriculum would be better characterised as child-sensitive rather than child-centred and suggests that the translation of the principles of the primary curriculum into effective practice requires more careful training and adequate resources than provided.

In addition to locating the child at the centre of the educational process both the 1971[6] and the 1999 documents also assert that the primary curriculum is an integrated curriculum that reflects current understanding of the integrated nature of learning. Despite this assertion the revised curriculum is published in twenty-three different handbooks. There is an overall introduction to the curriculum, which outlines the principles, aims and goals of the curriculum. The introduction is accompanied by eleven subject handbooks, reflecting the curriculum content, and eleven teacher handbooks with a practice focus. In addition to these handbooks the NCCA also published a parent guide (NCCA, 2000).

The Irish primary curriculum is for all primary education covering the age range from 4-12. It does note the special nature of early childhood and the length of day differs slightly for 'infants' and older children. Unlike the 1971 curriculum the introduction to the revised curriculum has a specific section on early childhood education. Within this section it is noted that: '*there is a need for a continuing process whereby the child's experience in the*

[6] This was the curriculum in place during the data collection period.

infant classes interacts with the developmental experience of home and family. This highlights the importance of the teacher's dual role as carer and educator' (Ireland, 1999b, p.30). Elaboration of what exactly is meant by play and its role in the curriculum is dealt with separately for each subject in the handbooks developed for each subject domain. In certain subject areas specific content and skill strands have been identified. For instance, in the science area four content strands are given. These are living things, energy and forces, materials and environment and care. There are two skill development strands, working scientifically and designing and making. Teachers are encouraged to plan for these strands using children's own ideas and teaching methods appropriate the their age and stage of development. Recognising that not all children start school with the same advantages the section goes on to call for appropriate special intervention in the pre-school years and in the early years of school to enable all children to benefit fully from the learning experience that the curriculum has to offer. The curriculum for infants stresses the uniqueness of the child and the particular needs of individual children at this stage of development.

The curriculum is guided by 17 principles which are an extension and elaboration of the original five principles underpinning the original 1971 curriculum. The 1971 curriculum identified five principles, which continue to underpin the current revised curriculum (Ireland, 1999b). These five principles are;

(i) The full and harmonious development of the child
(ii) The importance of making due allowance for individual difference
(iii) The importance of activity and discovery method
(iv) The integrated nature of the curriculum
(v) The importance of environment-based learning.

The revised curriculum alters the first two principles to celebrate the uniqueness of the child and ensuring the development of the child's full potential. The remaining three principles from the 1971 curriculum, identified as pedagogical principles, are subsumed into a '*wider range of learning principles that help to characterise more fully the learning process that the revised curriculum envisages'* (Ireland, 1999b, p. 9).[7]

In addition to the principles the revised curriculum presents fourteen issues for consideration in implementing the curriculum. They act as a context for primary education

[7] See Appendix 5 for detail.

within a wider brief. These are followed by 11 specific aims and 25 general objectives that are common to all classes in the primary school but take account of (i) the child's stage of development; (ii) differences between children and variations in personality and intellectual and physical ability and (iii) the particular circumstances of the school (p. 37). Although individual aims and objectives may appear to focus mainly on one aspect of the child's development the curriculum document clearly notes that all areas of child development are inextricably linked. At the publication of the revised curriculum (Ireland, 1999b) the Department of Education and Science initiated a phased introduction of the curriculum by subject area, allocating funds for in-service training of teachers, which is still underway[8].

The curriculum developed in 1971 was a radical rethink in primary education in Ireland. It was a document of its time and the principles underpinning the curriculum reflect the influence of a number of theorists, most prominently Jean Piaget. The two curriculum handbooks emphasised the integrated nature of learning, the importance of the process of learning as well as the product and the active role of the child in their learning. The primary curriculum itself was organised around traditional subjects and it almost doubled the number of subjects to be covered (Morgan, 2002). The paramount role of the teacher in the educational process was stressed and the importance of developing the skills and knowledge of reading, writing and mathematics was still seen as a primary function across all classes within the system. Reviews of the implementation of the primary curriculum in general suggest that educational practice was slow to respond to the new approaches implicit in document and this has been blamed on the lack of adequate adjustment to pre-service training, the lack of in-service support and the continuing high ratios of children to teachers across all classes (O'Rourke & Archer, 1987; INTO, 1995, Byrne, 2000; Daly, 2002).

The Revised Primary Curriculum[9] continued to characterise the curriculum in terms of traditional subjects and it added a number of subjects and learning areas to the existing 1971 curriculum. This expansion of the curriculum, along with other developments within the primary system, has several consequences and has created a situation where the

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[8] In 2002 a Model Framework for Education, Training and Professional Development in the Early Childhood Sector was published. It contained an agreed set of values for practice in the sector. These are detailed in Appendix 6.

[9] The data collected in primary schools for this study was collected while the 1971 curriculum was still in effect.

instructional time allocation for teachers has diminished. In particular Morgan (2002) notes that in attempting to get some coverage of every topic teachers may not be giving sufficient attention to developing the higher order skills of comprehension, comparison and inference that their European colleagues are. The curriculum documents encourages teachers to strive for a balance between skill development, fostering positive values and attitudes and the acquisition of information. There is as yet no evaluation of the implementation of the Revised curriculum or evidence on how it has impacted on classroom practice but concerns have been expressed that unless its publication is accompanied by adequate and appropriate training at pre-service and in-service level, a decrease in the ratios, particularly in infant classes and development of support systems for teachers its implementation may well be compromised (Byrne, 2000; McGough, 2002).

Most primary teachers have a Bachelor of Education Degree of three years duration [10] from one of the five colleges on education in Ireland. These colleges have developed with increasing autonomy, particularly in examining their students, since the 1970s and have introduced courses to the traditional teacher training modules in areas related to educational practice such as psychology and sociology. The move towards degree level training has been seen as important to the professionalisation of the sector. The *Report of the Working Group on Primary Preservice Teacher Education* (Ireland, 2001) is the first review of primary teacher training since the mid 1970s.

The Working Group considered the issue of Early Childhood Education under the general topic of 'Other Issues'. The Group pointed out that this was an area where colleges '*had not, in general, kept pace with changes and developments*' (p. 130) and, at the time of the report Early Education as a subject was offered in 3 of the 5 colleges of education (2001, p. 26). They concluded that courses would be required which would provide students '*with the knowledge and skills required to foster the motor, cognitive and social development of children, as well as their language and communication skills'* (p. 130). Continuing in the tradition of primary teacher training however, they focus on subject based training but do recommend calling on experts in early childhood education, curriculum specialists and psychologists to augment training in this area.

[10] Among its recommendations the report of the Working Group on Primary Preservice Teacher Education (2001) recommends a four-year degree training.

It is clear from the overall report that the Working Group did not consider early childhood education as a specialism requiring particular training but rather saw it as an integral part of the overall training of primary teachers. However, they did consider it worthy of more careful attention and planning and noted that it is important that Early Childhood Education should not be confined [as it has tended to be] to the first year of students' study. It should also be offered as an elective subject with post-graduate opportunities in the area developed. Finally the working group cautions against placing new teachers in junior classes as a matter of form although historically new teachers have tended to be placed in junior classes, possibly on the assumption that this provided an easy introduction to teaching. This, they note, is an unwarranted assumption.

4.7 Conclusion:

There are many different models and approaches to early education. The principles and values guiding these models, and influencing policy and pedagogy, are themselves influenced by social and cultural factors. In various reviews of the myriad models two distinct groups emerge: those providing early education to children as preparation for school and those recognising children as competent learners where practice is guided as much by children's interests as by adult planning.

While it is valuable to review the literature relating to early education, child development and issues of practice, the best way to understand how a country is providing early education for its young children is to observe early education practice. For the purposes of this study 203 four year olds and their teachers were observed in their classrooms. The following chapters present details of the methodology and principles, which guided the empirical element of this study and the results of the research.

CHAPTER 5

METHODOLOGY

Introduction:

The focus of this study is Irish-four-year olds attending the junior infant classes of the primary school. It draws its sample and elements of its design from the larger IEA Preprimary Project.[11] Taking a sub-sample of the Irish data set from the IEA project this study extends consideration of the results to examine the activities of Irish four-year-olds in junior infant classrooms, to describe the contexts within which these activities occur and to consider the implications for young children's learning. In addition it is designed to facilitate discussion and analysis of the results of this examination with what we know about young children's learning from recent research in developmental psychology and early education.

5.1 The IEA Preprimary Project:

In 1985 the IEA – International Association for the Evaluation of Educational Achievement – agreed to support a longitudinal, cross-national project exploring the impact of early educational experiences on later school success. The IEA is a non-governmental, non-profit-making organisation of research institutions, universities and ministry of education units in over fifty countries. For over thirty years, the IEA has carried out comparative international surveys of the educational achievement of students within the compulsory school system. Their support of the Preprimary Project marks the first time the IEA has examined education in the non-compulsory sector.

Fifteen countries took part in the IEA Preprimary Project offering a unique opportunity to examine a wider range of variation in early services than could be found within any single country. Each participating country identified a National Research Coordinator (NRC)[12] responsible for the national design, implementation and day-to-day running of the study.

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[11] Detail of the main IEA project is taken from Hayes, N., O'Flaherty, J. and Kernan, M. (1997) 'A Window on Early Education in Ireland: The First National Report of the IEA Preprimary Project' (Dublin: Dublin Institute of Technology).

[12] The author secured the participation of Ireland in the IEA Preprimary Project and has been the National Research Coordinator since 1994.

In Ireland the dedicated IEA centre is the Educational Research Centre (ERC) in Drumcondra. However, with the agreement of the ERC, the Preprimary Project is coordinated by the author through the Centre for Social and Educational Research (CSER), Early Education Unit, at the Dublin Institute of Technology.

The overall project management is the responsibility of an International Coordinating Committee (ICC) located at the HighScope Educational Research Foundation in Ypsilanti, Michigan, USA. The ICC, in cooperation with the NRC's and the approval of the IEA, has developed and piloted the various instruments used by the participating nations to gather data. The ICC is responsible for the final cross-national data analysis and monograph publications. In addition, each country determines the key local features of the study design and sample and disseminates its own findings.

The Preprimary project has been designed in three phases. This study extends the analysis of elements of the Irish findings from Phase 2:

- **Phase 1 (1986 – 1992)** produced profiles of national policies on the care and education of young children (Olmsted & Weikart, 1989, 1994) and used a household survey to identify and characterise the major early childhood settings used by families with 4-year-olds. Ireland joined the project late and so did not participate in this phase.
- **Phase 2 (1989 – 1995)** used extensive observational and interview data to examine the interactive and structural characteristics of the major early childhood settings and to explore the impact of expectations, curricular and familial factors on children's development at age four.
- **Phase 3 (1993 – 2000)** completes the project by describing the child development status at age seven and documenting how the early experiences affect such development. Age seven was selected as the endpoint for the study as it represents the age when all children in the participating countries will have had at least one year of formal schooling[13].

[13] Initial results from this Phase of the project have been published in Hayes, N & Kernan, M (2001) Seven Years Old: School Experience in Ireland: National Report of the IEA Pre-primary Project (Dublin: Dublin Institute of Technology).

The theoretical framework informing the design of Phase 2 of the IEA project and the design itself attracted the author's attention and acted as the motivation behind seeking to secure Irish participation in the study. Particularly impressive was the complex observational methodology designed to achieve a detailed understanding of what children were experiencing on a day-to-day basis in a variety of early years settings.

The author secured permission from the IEA national office at the ERC, Drumcondra to lead the project and the funding for the project was secured from the Department of Education and Science, the Combat Poverty Agency, the DIT and others to allow Ireland to join the project as a participant in Phases 2 and 3. The sample design and the broad aims of the Irish element of the project were in accordance with the requirements of the ICC and the IEA. However, they also reflected the particular interests of the funding agencies and researchers. In brief the aims of the Irish study were (i) to describe the quality of early years experiences of a sample of Irish 4-year-olds; (ii) to examine designated disadvantaged and non-designated disadvantaged settings and (iii) to build up a knowledge base in the field of early education in Ireland.

5.1.1 This study:

The initial PhD proposal submitted by the author to the School of Education at Trinity College was to carry out an observational study on a small sample of four-year-olds attending junior infant classes in the Dublin region. Once permission and funding was achieved for the IEA project the author submitted a revised proposal with the suggestion that a sub-sample of the IEA overall sample be used for the PhD. This alteration to the original proposal was approved. The author also secured permission from the International Coordinating Committee of the IEA for this more extensive local analysis. For the purposes of the current study the sub-sample of children attending the junior infant classes of primary schools has been taken as the study sample. Substantial additional analysis features are included to allow this study investigate more closely what 4-year-olds are doing at school, how this reflects the theoretical framework informing policy and curricular development for young children in Ireland and how it compares with our current understanding of young children's learning.

Because the author of this work is also the National Research Coordinator of the Irish element of the IEA project there has been very close liaison with the IEA coordinating team on issues of statistical analysis, particularly in relation to the observational data. The

analysis of the Irish observational data for this study preceded the international analysis and, as such, laid an important foundation for the approach taken in the overall study (Weikart, Olmsted, Montie, Hayes & Ojala, 2003). In particular the author worked closely with Dr. Pat Olmsted on the development of the observational matrices, the analysis of the adult/child and child/child interactions and the interaction between setting and process variables. The final methods of statistical analysis were approved by the IEA in 1999.

This study of four-year-olds in Irish primary schools is an entirely separate study to the IEA Preprimary Project with distinct aims and objectives. The link between the two studies is that data collected for the IEA project form the basis for this study, particularly the observational data. The distinction is that this thesis presents an extensive additional analysis of the school setting data and locates the discussion of the findings in a detailed theoretical context drawing on literature from national and international sources. For reasons of timing the analyses required for this study preceded the overall IEA project, particularly in relation to the analysis of the observational data. The author was, and continues to be, an integral part of the development of the statistical analysis informing the international study.

5.2 Education, Research and Children:

Historically, child development research has created a vision of development as a progression from a state of dependency - childhood - towards the preferred state of autonomy - adulthood. Children have been characterised more by what they cannot do than in terms of what they can do (Hayes, 1993). While young children are manifestly dependent on adults for much that is necessary to their survival, they are also active agents in the developmental process and contribute to that process, in ways that adults may find difficult to articulate. Judging children's development in terms of adult constructs, rather than in their own terms, creates a situation where children are seen as less able, less reasonable and less strong than adults.

Research in child development has, by the nature of its focus, separated out the individual child as the unit for study. In this regard it has been criticised as not giving due consideration to the interactive context and social nature of development (Hayes, 2002).

Since the late 1980s, however, there has been a growing recognition that children and young people can, themselves, contribute to our understanding of childhood. This is in

recognition of children as social actors creating themselves in, and influencing, different social contexts. James and Prout (1990) suggest that this recognition has led to a shift towards emphasising 'agency', where children are recognised as active individuals in their own right. Such a shift does not negate the importance of biology in development, but highlights the interactive nature of development where children are active agents in influencing the contexts that, in turn, influence them.

This view of children and childhood has been enhanced by the virtually universal acceptance of the United Nations Convention on the Rights of the Child [UNCRC] (Woodhead & Faulkner, 1999; Hayes, 2002; Nutbrown, 1996)[14]. The growing attention, nationally and internationally, to children's rights and to valuing children in and of themselves has been an influencing factor in forcing a review of how we consider children in both research and practice. A comprehensive agreement on behalf of children, the CRC has profound implications for how we address the sensitive issue of respecting children's rights whilst trying to gain insight into their lives.

Of particular importance to this endeavour is Article 12.1 which states that '*State Parties shall assure to the child who is capable of forming his or her own views the right to express those views freely in all matters affecting the child, the views of the child being given due weight in accordance with the age and maturity of the child*' (1989). This Article has implications for many different areas of children's lives. In relation to research specifically, child advocacy and children's rights literature has led to increased awareness of the right of children to be included as participants in research intending to shed light on their lived experiences. There have been many calls for greater participation of children in research and for higher value being placed on what they themselves can contribute to our knowledge about children and childhood matters (Davie, 1996; Dockrell, Lewis & Lindsay, 2000; Greene, 1997, 1998; Hart, 1992; Hayes, 2002; Hogan, 1998; Lewis & Lindsay, 2000). Hogan (1998) has argued that excluding children from research is evidence of the marginalisation of children and the practise of ignoring children as direct respondents in research about them carries with it the implicit message that children are peripheral to or inferior in research. In a comprehensive review of the marginalisation of children in family research Hogan, Etz and Tudge (1999) suggest that the way research on

[14]Ireland ratified the Convention, without reservation, in September 1992 and the Convention came into force in October 1992.

children has been carried out reflects a number of assumptions, which adults make about children.

5.2.1 Children in research:

Reviewing the history of children in research illustrates the strength of theoretical assumptions about children and directly affects the design and methodologies used (James, 1998). An explicit awareness of the underlying theoretical assumptions guiding research can assist in creating greater sensitivity to the practical and ethical issues involved in researching with children. One assumption, evident in the dominant stage theories of child development, such as those of Freud, Piaget and Erikson, views development as a positive, progressive process where childhood is a period of transition. Within this view children are seen as not yet fully developed, as a set of potentials, projects in the making. The direction of development is towards achieving a mature, rational, responsible and independent adulthood (Hayes, 2002; Hogan, 1998; Woodhead & Faulkner, 1999). Children are not seen as capable of contributing directly to research knowledge about themselves and so this information is gathered at a remove. This has allowed researchers to collect research data about children and their lives from the adults around them such as parents and teachers rather than directly from children. While valuable, this approach can yield only a limited insight into children's lives.

Research on children, which has frequently derived from the developmental paradigm has come under scrutiny because the basis of the research – the developmental paradigm - has itself come in for criticism in recent years (Burman, 1994; Hogan, 1998; Morss, 1990, 1996; Prout & James, 1990, Woodhead, 1990). While the aim of child development research is to gain a better understanding of children so that we can guide and develop more appropriate environments for children, Hood, Kelley and Mayall (1996) argue that the aims and methodologies of research on children have been too adult-led and children merely regarded as the objects of study. In discussing their position as objects of research Greene (1997, 1998) makes the interesting observation that '*psychologists have seen as objects the people who were the focus of their observations or experiments – although in a strange inversion of meaning they have referred to them as 'subjects'* '(1998, p. 259).

The methodologies of the positivist tradition, dominant in much developmental research, require standardisation of techniques to elicit objective data that allow for replication. Early research in child development, such as that led by Gesell in the 1920s and 1930s

used systematic observation of children in a laboratory setting. The observer was at a physical remove from the children and the settings were designed by the researcher to elicit detail on various aspects of development. His research provided the foundation for the developmental milestones of physical, social and intellectual development which continue to influence contemporary childhood research, practice and policy. The legacy of this approach can still be seen in the use of the one-way mirror system in research laboratories, clinics and special education settings. Bronfenbrenner (1979) considered that researchers using such methods were gathering data about '*the strange behaviour of children in strange settings with strange adults for the briefest possible periods of time*' (p.19).

The view that there are strong universal features of child development has led to a situation where research results from laboratory-based researched cultures of Western Europe and North America are taken to reflect the experiences of all children. In fact they reflect a very particular aspect of the development of a very particular group of children. The wider socio-cultural contexts of childhood have been neglected. The prevalence of this approach to researching children as objects is further evidenced in the research on attachment and emotional development of children that uses the research design known as the 'Strange Situation'. This procedure, developed by Ainsworth and her colleagues has been questioned on both methodological and ethical grounds (Dunn, 1993; Woodhead and Faulkner, 1999). Striving for quantitative, comparable and replicable data has compromised the quality of our understanding of what actually happens for children in their daily lives and spaces and has been criticised as valuing objectivity over an understanding of the lived experiences of children (Hogan, 1998).

The influence of the developmental model is also evident in educational research. Where children are seen as in transition to the state of adulthood it is easier for adults to assume that the direction of influence on learning is one way, from the developed adult to the developing child. This has influenced the design of educational research in that much of the data about children in education has been gathered from teacher reports and surveys, behavioural checklists or through assessment of child outcome measures such as reading age or IQ score. There has been limited research attention, through, for instance, observation, given to the processes and interactions of the day-to-day educational experience for either child or adult. This study uses observation schedules to gather data directly from children in everyday contexts.

5.2.2 Researching children's lives:

The belief in a universal pattern to child development, implicit in certain interpretations of the developmental paradigm, also carries with it the danger that the unique nature and individuality of each child is lost and allows for the development of 'one-size-fits-all' programmes. In education such an approach can diminish attention to the individuality of learners and ignore the contribution of individual experiences to the learning experience. This is particularly critical in the early years where children seek to make sense of the world and its rules in terms of their experiences and this can be made more difficult where context and past experience is not taken into account as the basis from which curriculum in practice is developed.

There have been calls for a reconsideration of this approach in the light of our increased understanding of child development. The crucial, bidirectional effect, whereby child characteristics influence the adult in the way in which they, in turn, interact with the child, was highlighted by Bell and Harper (1977) who argued that all correlations between adult behaviour and child behaviour or development can be interpreted either as an adult-to-child effect or a child-to-adult effect. They suggested that the best approach for the educational researcher is to consider the interaction as a bidirectional phenomenon. There is little evidence of the use of this approach in research into pedagogical practice in early and primary education in Ireland (Hayes, 1983; Hayes et al, 1997; Horgan, 1995).

Although research methods in education have been influenced by the developmental paradigm (Pellegrini, 1988, 1996; INTO, 1995), early education as a research domain, has challenged the value of this singular approach to research design. Indeed the interdisciplinary nature of early education research has been a rich source of creative methodologies that maintain rigorous measures of reliability and validity. This has occurred in response to recognising the particular nature of early childhood (Carr, 2001a; Corsaro, 1988, 1992, 2003; Corsaro & Molinari, 2000; Corsaro, Molinaru & Rosier, 2002; Dunn, 1987; Pellegrini, 1996; Sylva et al., 1980; Tobin et al., 1989).

Too much focus on gathering 'objective' facts about children in a manner that is reliable, valid and replicable is no longer sufficient in research which aims to understand children and childhood. There is a growing acceptance that data from controlled experiments which are laboratory based are insufficient when trying to understand the worlds of children and their lived experiences of those worlds. The high profile of contextual models

such as the bio-ecological model (Bronfenbrenner & Morris, 1998) and the socio-cultural model of Vygotsky (1978, 1986) within early educational research is testimony to attempts to capture the complexity of the developmental process so that we can inform practice, policy and further research in a meaningful and contextually appropriate way. However, Bronfenbrenner (1998) and others (Hogan, Etz & Tudge, 1999; Pellegrini, 1996; Tudge, Hogan & Etz, 1999) caution that the theoretical sophistication of these models is rarely evident in the methodologies and analyses of researchers.

In response to the limitations of traditional scientific methods, especially the emphasis on largely quantitative methods, qualitative methods have been developed to directly research children's lives and opinions. These include interview methods (Hill, 1998; Langsted, 1994) ethnographic methods in early education (Corsaro, 1988, 1992, 2003) and observational methods in a variety of real life contexts (Blenkin, 1992; Dunn, 1987; Pellegrini, 1996; Rogoff, 1990) including early education settings (Hutt et al., 1989; Sylva et al., 1980; Tobin et al., 1989).

5.3 Research Methods in Early Education:

Since the 1960s there has been a growth in research interest in early education. Initially research examined the effectiveness of early educational provision on the development and school success of children at risk of educational failure. A review by Crahay (1990) illustrates that until the 1980s the design of these evaluation studies, often driven by a policy demand for immediate, positive results on educational investment, emphasised an input-outcome model. In particular they sought evidence of a permanent effect in terms of child outcomes such as IQ measures which could be directly related to a particular curriculum, programme or investment. The earliest studies of effectiveness, in both Europe and the US, used pre- and post-programme assessment of children's IQ score as a measure of programme success (Holland, 1979; Kellaghan, 1977; Lazar & Darlington, 1982; Osborne and Milbank, 1987). Follow-up studies showed a fading of the IQ gain once children moved through primary school suggesting that the positive impact of early education on IQ was a transient feature. Later, however, more long-term follow-up studies examined broader outcome measures such as social and economic status. This research demonstrated that children who had participated in different intervention preschool programme were significantly more successful in school and in life than their counterparts who had not participated in a preschool programme (Schweinhart, Weikart & Larner, 1986; Berreuta-Clement et al., 1984; Kellaghan & Greaney, 1993).

In an effort to identify what might be the key features of a preschool programme contributing to continued positive impact, a number of comparative studies were carried out. Schweinhart, Weikart & Larner, (1986) compared three different early educational programmes to assess the degree to which the educational approach of particular settings contributed to their effectiveness. Their finding at this time was that attendance at preschool is important, in and of itself, as it increases a child's cognitive abilities in advance of school entry, a finding endorsed by the extensive study carried out by Osborne and Milbank (1987) in their UK review of preschool impact.

The rise in use of childcare facilities in Western Europe and North America has generated a variety of research studies into the provision and quality of such services and their impact on children and families. Results suggest that the positive outcomes attributed to attendance at preschool, and other quality early childhood settings, affects the overall motivation and commitment of children to school (Dweck and Leggett, 1988; Schweinhart, Barnes & Weikart, 1993, Sylva, 1994a, 1994b). In other words, there appears to be a direct relationship between commitment to school and early education which suggests that, in addition to cognitive effects, there is an important affective component in the direct impact of early education on young children.

A recognition of the transactional or bidirectional nature of the processes in early education has guided later research design in early education. Attention to this social, interactive dimension of early education was missing from much of the early research. More recently the dynamic models of child development, such as those advocated by contextual theorists (Bronfenbrenner, 1979, 1998; Sameroff & Fiese, 1989; Tudge, Shanahan & Valsiner, 1997; Van der Veer & Valsiner, 1994; Vygotsky, 1978), which view children as agents in reciprocal relationships with other actors and with their environments, have received more attention in the literature. To paraphrase Corsaro (1992) it is now acknowledged that education is not something that happens to children, it is a process in which children, in interaction with others, produce their own learning and come to reproduce, to extend and to join the adult world. Educational research is increasingly recognising this dynamic and developing methodologies to examine the mediating and underlying processes.

Findings from studies of early educational settings across a wide range of constituencies, combined with the results from longitudinal follow-up studies of children who had attended intervention preschools in the 1960s and the rise in interest in contextual models of development began to give rise to questions about the validity of a simple input-outcome approach for evaluating effectiveness. The design of these earlier studies failed to capture the complexity of the mediating processes of the everyday experiences within early educational settings, interactive processes which are known to have an important impact on child development and later school behaviour (Rogoff, 1990). From the 1980's research into early education began to move beyond simply attempting to prove the effectiveness of early education towards addressing the more complex question of the quality of early education. What really happens to children in preschools settings and what is best for children (Bruner, 1980; Sylva et al., 1980; Weikart, 1987)? Studies on quality found that what actually happens within the setting, the process, is influenced not only by the individuals present but by setting variables as well. Such variables include adult:child ratio; group size and the training of the adults working with the children (Bruner, 1980; Clarke-Stewart, 1991; Phillips, 1987).

The developmental paradigm so dominant in psychology and education has been challenged almost since its inception. At the turn of the last century psychologists such as Vygotsky and Mead (1937) recognised the importance of the social experience to the overall development of the individual. In the field of education consideration of the social nature of the child and the interactions in the educational settings was central to the work of John Dewey (Archambault, 1964). By the 1970s developmental psychologists such as Bronfenbrenner (1979, 1985, 1993, 1998) and those revisiting the work of Vygotsky such as Bruner, (1962, 1996) and Cole (1978, 1996) were arguing the case for considering the context of development as central to the understanding of individual development. These authors were not simply acknowledging that features of the context influenced individual development. Rather they argued that development was contingent on the quality of the transactional experiences of the individual in context. Developing qualitative as well as quantitative methods for researching these transactional experiences pose unique challenges to those working in early education given the nature of early childhood.

The finding from these various studies and research debates - that the ecology of the setting as well as the interactive nature of the preschool programme itself was influential - and the methodological questions posed, led Crahay (1990) to propose a research design

for the IEA project which moved away from the familiar process-product paradigm to a combination of the mediating process paradigm and the classroom ecology paradigm.

5.3.1 Quantitative and qualitative methodologies:

There has been much debate about the relative value of quantitative over qualitative methodologies in early educational research as elsewhere in the social sciences. Hammersley (1999) in his review of the rise in attention to qualitative research, particularly observational methodologies, notes that the validity of quantitative research – particularly in the social sciences – has been challenged on a number of grounds. The limitations he identifies in quantitative methods include the fact that:

(i) The structured characteristics of the data collection process involves imposition of the researcher's assumptions about the social world and consequently reduces the chances of discovering evidence discrepant with those assumptions.

(ii) Recording what happens in 'natural' settings specially set up by the researcher and generalising out of these settings to the real world is questionable.

(iii) To rely on what people say about what they believe and do without also observing what they do is to neglect the complex relationship between attitudes and behaviour.

(iv) Quantitative analysis reifies social phenomena by treating them as more clearly defined and distinct than they are, and by neglecting the processes by which they develop and change and

(v) Quantitative analysis assumes that people's actions are mechanical products of psychological and social factors, thereby neglecting the creative role of individual cognition and group interaction.

It is these limitations that have led to the emergence of qualitative methods, recognising, as they do that '*the nature of the social world must be discovered; that this can only be achieved by first-hand observations and participation in 'natural' settings, guided by an exploratory orientation; that accounts of the findings of research must capture the processes involved and the social meanings that generate them'* (Hammersley, p. 54). The IEA project was designed with this complexity in mind. Anticipating many of the methodological issues raised above, the design represents a balance of quantitative and qualitative measures. Such a mix, while presenting methodological challenges (France, Bendelow & Williams, 2000) has been identified as critical to a richer understanding of social phenomena.

In their review of qualitative research methods Bryman and Burgess (1999) identify some difficulties that exist with qualitative methods. These include the fact that:

(i) The term qualitative research seems to imply any approach which does not entail collection and analysis of quantitative data. This view is generally regarded as unhelpful, largely because qualitative research is viewed by most writers and practitioners as being more than the mere absence of quantitative data,

(ii) Very often accounts of qualitative research are set up in terms of differences from, and often in opposition to, quantitative research. This strategy is not intrinsically problematic but runs the risk of qualitative research being formulated in terms of what quantitative research is not.

(iii) Many writers point to different traditions within the category of qualitative research so there is a risk that the terms mask substantial differences in approach.

Notwithstanding the contrast that can be drawn between qualitative and quantitative methods Bryman and Burgess argue that the debate about the relative value of qualitative and quantitative methods is unnecessary. More researchers are drawing on both approaches in their research designs and note that '*to a certain extent this view represents a drift in recent years towards a rapprochement between the two approaches. It also reflects a tendency to conceive of the distinction between quantitative and qualitative research in terms of complementary rather than opposition*' (p. xiii). By developing a complex, integrated observation system to gather data on children in their early years settings and linking it to other data collected through interview and survey instruments, the IEA project exemplifies this complementarity.

Pellegrini (1996) considers that observation should be considered a quantitative methodology as the observer is an objective outsider and observation yields considerable quantitative detail - this is in opposition to a view taken by some who consider observation as 'naturalistic' research, with the researcher as participative and the record, mainly, narrative. The division into 'either/or' is not helpful and the two methods should be seen as complementary and not confrontational; the key issue should be the rigour of the standards of reliability and validity within the method and the quality of the analysis.

In support of naturalistic observation Tudge, Hogan and Etz (1999) note that '*the importance of this method {naturalistic observation} goes far beyond the descriptive ... if researchers are to take seriously ecological and contextual theories, such as those of Vygotsky and Bronfenbrenner, it is essential to have a means of operationalising the concepts... The importance of methodology cannot be overemphasised ... it must be recognised that the laboratory is but one specific context, and we know little about how children's behaviour in this context relates to their behaviours in the contexts in which they typically find themselves. Naturalistic observation studies are, we believe, a clear improvement on laboratory-based studies*' (p. 125).

Pellegrini (1996) does note that the quantitative and qualitative aspects of scientific enquiry need to find some compromise in relation to research in early education and child and educational psychology because research '*should aspire to explain the ways in which organisms live and develop in their natural worlds. We need some level of explanation and causal inferences so that we can begin to understand the processes more clearly and then use the information to design educational environments*' (p. 4).

5.4 The Design of the IEA Preprimary Project:

Following discussion with the participating countries under the direction of the International Coordinating Committee and with the agreement of the IEA, a final conceptual framework was agreed. The framework is broadly based on the ecological systems model of development described by Bronfenbrenner and colleagues (1979, 1994, 1998). In all the iterations of his model of development from the initial presentation of his ecological model in 1979 to its most recent configuration as the bio-ecological model in 1998 (Bronfenbrenner & Morris), Bronfenbrenner has drawn attention to the need for researchers to design methods with close attention to the complexity of interacting systems and the interactions between and within those systems. He challenges researchers to achieve ecological validity in research design – that is the degree to which research has validity/relevance to the every day lives of the individual and of children in particular.

The design of the IEA project owes a lot to the ecological model of Bronfenbrenner and, indeed, anticipated aspects of his later work. Bronfenbrenner (1995; 1998) identified four key components which form the basis for the theoretical aspect of his bio-ecological model and the criteria against which research design investigating development should be judged. These elements are Person, Process, Context and Time (PPCT). The link between his

proposals on research design and the design of the IEA project is outlined below. For details of the IEA conceptual framework see Figure 5.1.

The PPCT model requires that research design attend to adults and to children (P), as active contributors to their own development, using observational methodology to detail processes (P) and linking this with data gathered from different contexts (C) across time (T). To address the 'person' element of the design details of person characteristics such as age, gender and developmentally instigative characteristics including beliefs, persistence, and dispositions, are collected. In the case of the IEA study biographical details were gathered on children, teachers and parents in addition to teacher and parent expectation data in relation to young children learning. The 'process' of development includes researching the 'proximal processes' as the engines of development. These processes involve oft-repeated and developing interactions, the essence of what occurs in the course of everyday life. The use of direct, integrated observation of children and adults in the classroom setting aims to gather material relevant to this process element. Bronfenbrenner characterises the 'context' element of his model in terms of a series of nested levels. Taking account of these levels the IEA study analysed both preschool and school settings. This particular study refers only to the junior infant classroom (Microsystem); the match between parental and primary teacher expectations and the degree to which teacher expectations match observed practice (Mesosystem); aspects of educational policy, such as the principles and values of education as evidenced by reference to policy documents (Exosystem) and, finally, the influence of societal values and the position of the child in general and the early years child in particular (Macrosystem). However, context is not merely situational, it is also temporal. Bronfenbrenner includes 'time' as a key element in research design. The influence of a particular time must, he argued, be acknowledged and so the temporal context in which research takes place needs to be elaborated. The overall IEA design meets this requirement as it is longitudinal over the three Phases.

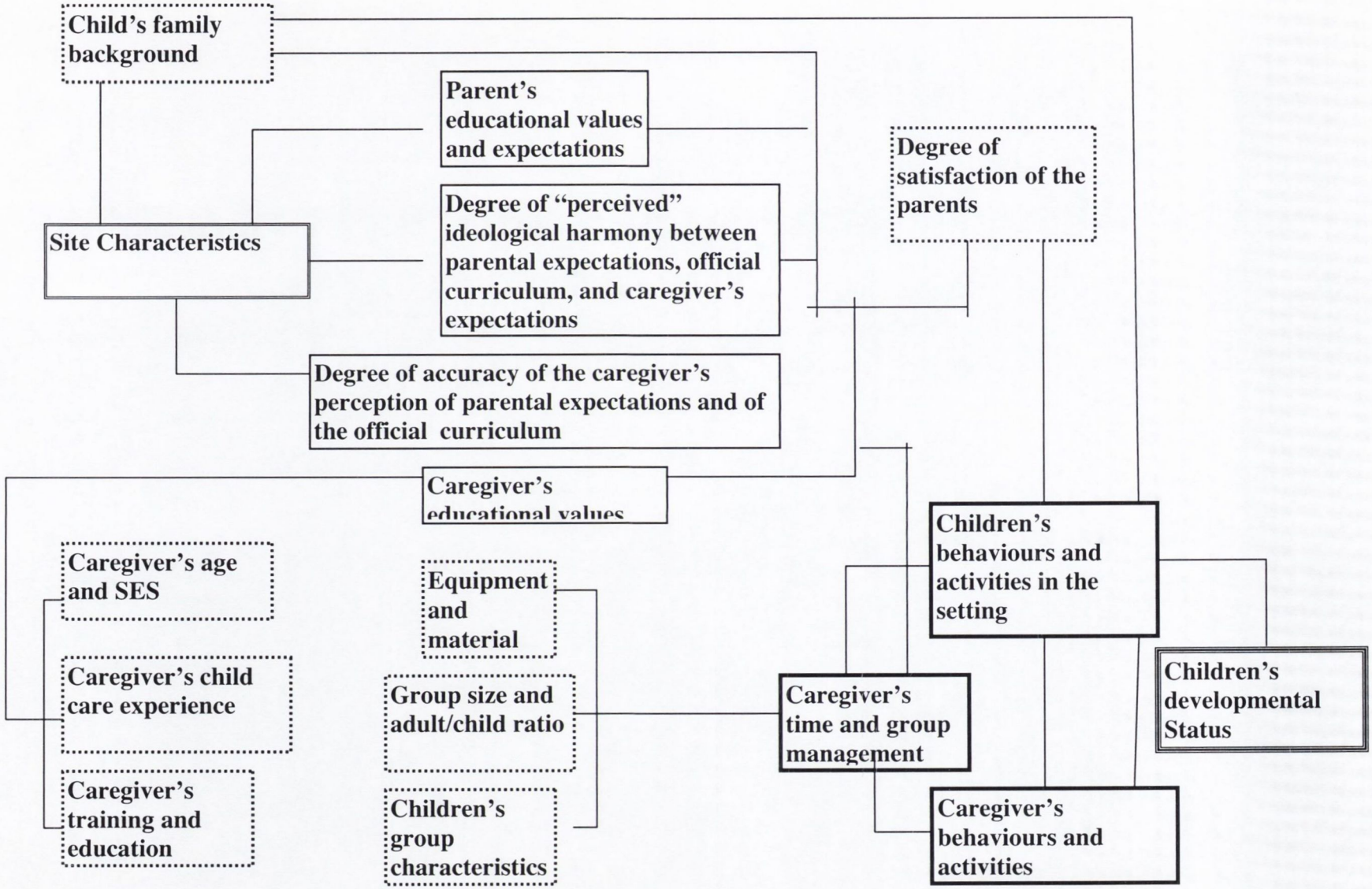

Figure 5.1. IEA Preprimary Project conceptual framework

Of more immediate relevance to this study the time aspect is captured by the temporal design for the Phase 2 observation data collection, which it was agreed would occur over two non-consecutive days.

Research designs of this type begin to address the multiple interrelations between cultural contexts and individuals within these contexts which, in turn, influence these contexts. Gathering information about children's use of time is valuable as it can inform interventions and practice. Educational practices and curricula emerge from assumptions about education and its organisation. It is helpful to refine these assumptions with detailed descriptions of day-to-day activity that are reliable and valid. Previous IEA studies have been directed at school age children and use frameworks and research methods considered appropriate to evaluating the effectiveness of compulsory schooling. Such methods were not directly applicable to the examination of early education and more innovative methods and instruments, including an integrated observation system, had to be designed.

In its design for Phase 2 the IEA Preprimary project allows an examination of the day-to-day experiences of children in early years settings from many perspectives. In an attempt to both address cultural concerns and allow the broadest possible use and interpretation of project findings, a common set of measures was developed and standardized by cross-national teams. In addition, each national group had the option to adapt the measures by adding items of special cultural concern. Each national research coordinator worked to ensure that the measures were culturally appropriate for the children and their families by piloting the final instruments and advising the ICC of any changes that were needed.

Although not involved in the design of the instruments, the Irish team did pilot the material in advance of data collection. Arising out of this pilot a number of changes were made and agreed. For instance, there was one recognition item in the child developmental status measure where a picture to be identified verbally was shown as representing a 'cupcake'. In the Irish context this answer would not be usual and so 'bun' or 'fairy cake' were agreed as acceptable. In the family background questionnaire the questions about income were modified into a table of bands rather than seeking exact income information as the advisory board and the research team felt this would be likely yield more useful data. In the observational system data was also gathered on the child's exposure to the Irish language across different settings, a feature unique to the Irish study. These and other

slight changes were agreed at a national and international level and the coding and analyses adjusted to allow for their inclusion in the overall results of the study.

The agreed framework was designed to explore the interplay of five major groups of variables outlined below at Table 5.1. This comprehensive set of Phase 2 variables forms the basis for a process model of research that seeks to understand not just *whether* but, more important, *how* early experiences influence children's short and long term development.

Table 5.1: Details of variables informing the conceptual framework of Phase 2 of the IEA Preprimary project.

Variable	Example
Family characteristics	Parental education and occupation Household composition
Setting characteristics	Teacher education and experience Equipment and materials Group size and adult:child ratio
Teacher characteristics	Beliefs about the importance of Various areas of development of 4-year-olds Management of children's time Behaviours/interactions with children
Child behaviours	Activities observed in the setting Involvement with other children Involvement with adults
Child developmental status	Cognitive development Language development Pre-academic skills

5.4.1 The Irish phase 2 design for the IEA preprimary project:

Describing the daily experiences of children in early childhood services is a complex undertaking and there was little research data available on the quality of early educational experiences of 4-year-olds in Ireland prior to the IEA project. Some research had been carried out in relation to practice in primary schools, for example O'Rourke & Archer (1987), but this was, in the main, questionnaire-type surveying rather than observational research. Some limited observation based research had been undertaken at postgraduate level (Hayes, 1983; Horgan, 1987; Horgan, 1995). The lack of large-scale national data observing the processes within early years settings meant that we knew very little about the quality of the actual experiences of 4-year-olds in Ireland.

The Irish Phase 2 element of the project studied a sample of 396 4-year-olds, their families and their teachers. The project investigated the nature of the children's experiences in designated disadvantaged (DD) and non-designated disadvantaged (NDD) preschool and primary school settings through the use of an integrated observation system. It described structural features of the settings and examined the expectations of teachers and parents about the different areas of development and their importance to young children. A further aspect of the study was to examine the developmental status of the sample of 4-year-olds. Details of this aspect of the study and subsequent research with the sample can be found in various publications (Hayes, 2000; Hayes et al., 1997; Hayes & Kernan, 2001; Kernan & Hayes, 1999; Weikart, 1999).

The present study is concerned with a sub-sample from the main IEA project, four-year-olds attending junior infant classes. Details of the sample selection for the whole project are presented below to provide a context for the sub-sample selected as the focus of this work. While giving general information on setting selection detail is presented on the school selection only. Finally, the instrument development detailed is for those instruments of relevance to the present study – the observation systems and the expectation questionnaire.

5.4.2 The sample:[15]

Children:

Three hundred and ninety-six children, 209 boys and 187 girls, participated in the overall IEA project. In line with the overall sampling advice to the project this represented, as near as possible, four children per setting. The sampling guidelines required that all national samples contained setting representation from those settings attended by 20% or more four-year-olds. For the Irish sample this limited the settings selected to the junior infant classes in primary schools and a selection of preschools. The funding groups also influenced the selection of settings. They required that the sample allow for comparisons across settings identified as designated disadvantaged and non-designated disadvantaged settings. Details of the sampling process are expanded at 5.4.3. This thesis reports on additional analysis of the data of the 203 children attending the 55 schools. The children represent a sample from 27 DD schools and 28 NDD schools. The majority of children were aged between 4 years and O months and 4 years 11 months, although a small number

[15] Much of this section is taken from the report of the study Hayes, N., O'Flaherty, J & Kernan, M. (1997) 'A Window on Early Childhood Education' Chapter 3.

fell outside this range at the time of testing. Over one third of the sample came from the Greater Dublin Area, which is in line the general distribution of population in Ireland.

Parents:

Although permission to participate in the project was given on behalf of all 203 parents of children attending schools only 197 parents (in most cases the mother) responded in full to the expectations section of the study. For the present study data from 197 families of children is used.

Setting Directors and Teachers:

The setting directors/principals from the 109 settings who participated in the project gave permission to the research team to nominate data collectors to visit their settings. This present study reports and analyses the data collected from the school principals, 55 in all. Only one data collector visited a setting although data collectors had responsibility for a number of settings in their region. On visiting a setting the data collector introduced themselves to the director/principal and proceeded to carry out the schedule of observations and interviews necessary to gather the data. In all 55 school settings the directors/principals and their teachers (sometimes one and the same) agreed to complete the Expectation and Provider survey schedules.

Limitations:

The data informing this study was collected during the academic year 1994-1995. The delay between the data collection and the submission of this thesis could be seen as a limitation to the study. There have been a number of policy developments with respect to curriculum and ratios that may have altered the reality for Irish four-year-olds. However, although collected some time ago there is strong evidence from national and international reports that the data does still reflect, in many aspects, the current position for four year olds in the infant classes in Ireland to-day (Morgan, 2002; Murphy, 2004; OECD, 2003; OECD, forthcoming).

5.4.3 The selection of settings:

The ICC worked closely with all NRCs in designing the sampling procedure for the settings within which the observation of children and adults took place. Dr. Leslie Kish, professor emeritus at the University of Michigan, where he founded the Institute for Social Research, acted as the sampling referee to the project and approved all sampling plans. The

Irish Department of Education and Science cooperated very closely with the author in the detail of the sampling process.

Setting types were selected on the basis that 20% or more of 4-year-olds in Ireland attended such settings. From the limited data available at the time two main settings emerged – the preschool services and the junior infant classes of the primary school. These two types of setting were further divided in terms of designated disadvantaged (DD) status and non-designated (NDD) status. DD school settings were selected according to the criteria laid down by the Department of Education and Science at the time of sample selection. Schools seeking disadvantaged status are assessed and prioritised as to need, on the basis of socio-economic factors such as the number of pupils whose families (a) reside in local authority housing or flat or non-permanent accommodation, (b) hold medical cards and (c) are in receipt of unemployment benefit or assistance.[16]

The sample of school settings was developed as follows. Listings of children attending primary schools were obtained from the Department of Education. This listing was further divided in terms of DD or NDD for both schools (NS). Approximately equal numbers of settings were to be chosen for each of the cells – DDNS and NDDNS. From each setting within the four cells the data collector chose, randomly, a maximum of four children from those within the target age-range and for whom parental permission had been received.

For setting selection the Probability Proportional to Size (PPS) procedure was used. With probability sampling, each unit in the survey population has a known, positive probability of selection. This property of probability sampling avoids selection bias and enables researchers to use statistical theory to make valid inferences from the sample to the survey population. In PPS sampling, a unit's selection (in this case a school) is proportional to its size measure (in this case the number of pupils) and is used to avoid the overrepresentation of very small units. This procedure is often used in cluster sampling, where clusters (or groups of sampling units) of various sizes are chosen in the first stage of selection. For example, clusters may be schools, hospitals or geographical areas, and the final sampling units may be students, patients or residents. Details of the process for school setting and sample selection is presented in Appendix 7.

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[16] These criteria have since been refined to include such factors as the level of unemployment, the educational level of the parents and the number of one-parent households in determining designation. Furthermore, a mechanism for distinguishing between small rural schools and large urban schools with factors relating to farm income being taken into account in respect of the former.

5.5 The Measurement Instruments:

The set of instruments used for data collection in the overall IEA Preprimary project included three questionnaires/surveys, three observation systems and five child development status measures. These instruments were designed by the National Research Committees under the direction of the International Coordinating Committee of the project and piloted prior to use in the project. Ireland was not part of the project during this development phase and therefore was not part of the international piloting of the instruments.

For the purposes of this study only the design and development of the observation systems and the expectations questionnaire will be presented as it is the data collected using these instruments which informs the work.

5.5.1 The observation systems:

We have very little direct information on the activities of young children in school. We know little about the amount of time they spend on activities, whether and how they engage with different activities. We have no idea of the balance between self- selected activities and those selected by the teachers, nor detail on how teachers organise their time and children's time. Neither do we have detail of the level of social interaction in the junior infant classroom: what level of child-child interaction there is and how this is facilitated by setting variables. What information we do have has come largely from the reports of adults (INTO, 1995). The value of this present study is that it addressed the above questions, and more, through the use of an integrated observation system which yielded data on child activities (CA), adult behaviour (AB) and the management of time (MOT) by the teacher.

Observation is a particularly appropriate method when working with young children who may not possess the language to convey information. However, there are difficulties associated with using observational methods and lengthy observations may be considered too intrusive and too time consuming. The theoretical frameworks underpinning the IEA study required the use of a complex integrated observation system so that simultaneous attention could be paid to the context, the setting, the individuals in that context and the processes that link both context and individuals and that are part of the interactions

between those individuals. The observation system was designed to allow for recording multiple tasks and the maintenance of a running record of time management in all settings.

Instrument Design

In 1988-1989 a sub-group was established, consisting of researchers from the IEA national committees, to compile instruments to measure setting-process variables such as the general nature of children's activities, social context of activities, interactions, levels of engagement on different activities and adult behaviours. The sub-group reviewed contemporary reports from research projects including those observing adult-child interactions and those where children's activities were observed. In addition various rating scales and observation checklists were also reviewed.[17]

Drawing on these and other, more local, materials a preliminary observation system – including schedules and coding categories - was developed and piloted by participating countries. The results of the pilot tests were presented at the 1990 meeting of the NRCs and discussed. The instruments were refined into the three systems: a Child Activity System (CA) and a Management of Time (MOT) and Adult Behaviour System (AB), derived from the original Management of Time schedule. The instruments underwent a final set of revisions to create and define mutually exclusive categories. To facilitate efficient and effective data analysis these were reorganised to be as parallel as possible across the three observation systems. A list of the agreed categories for the MOT, AB and CA schedules can be found in Appendix 8.

It was agreed that the systems would be used by the data collectors on each of two non-consecutive mornings per setting. The systems were used simultaneously with the Management of Time (MOT) system completed continuously over the entire observation period (3-3.5 hours/day). The Child Activity (CA) and the Adult Behaviour (AB) systems were each completed during various ten-minute periods. Figure 5.2 gives details of the schedule of observations used by the Irish data collectors in a setting with four target children. The pattern was modified where there were less than four children but the observation period and the length of observations were always the same.

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[17] For detail see Claxton, J. & Lockhart, S., [2003] 'Phase 2 Observation Systems: Development and Training Procedures" in D. Weikart, P. Olmsted & Montie (eds.) "A World of Preschool Experience: Observations in 15 Countries" (Ypsilanti: HighScope Press)

Figure 5. 2 Combined observation systems data collection schedule

TIME	DAY 1						DAY 2					
	MOT	AB	CA 1	CA 2	CA 3	CA 4	MOT	AB	CA 1	CA 2	CA 3	CA 4
9:00												
9:10												
9:20												
9:30												
9:40												
9:50												
10:00												
10:10												
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11:10												
11:20												
11:30												
11:40												
11:50												
12:00												
12:10												
12:20												
12:30												
TOTAL	3-3 _ hr	20	20	20	20	20	3-3 _ hr	20	20	20	20	20

Sample Schedule Sheets for observing Child Activity (CA), Adult Behaviour (AB) and Management of Time (MOT) are included at Appendix 9.

Limitations:

There are limitations to using observation. With this particular system it was necessary to train observers carefully as the integrated nature of the system required a good deal of guided practice. In practical terms there are also potential difficulties. The presence of an unfamiliar, additional adult can be disruptive in a classroom if not managed carefully. Where possible, data collectors visited settings in advance of data collection and, on data collection day, arrived at the setting in advance of actually recording observation data. Observations were carried out on two non-consecutive days in an effort to minimise the influence of any special event or unusual behaviours. Other adults in the setting may be constrained by the presence of the observer although our study recorded no evidence of any such response and it was flagged as a possibility in training. It is difficult to estimate

whether or not there was a decrease in what could be described as inappropriate or harmful behaviour.

5.5.2 The expectations questionnaire[18]:

Integral to the design of the IEA project is the belief that settings affect the development of young children by means of intervening variables including such intangible variables as adult ideas, which comprise attitudes, beliefs, expectations. These ideas influence the adults' planning and practice and, in turn, influence child development. The rationale for including the expectations questionnaire among the instruments of Phase 2 of the IEA project was the conviction that the effects of a setting on child development should be evaluated both in terms of the expressed values of the setting and the values ascribed to it by the adults in associated settings, such as the home.

There have been studies comparing parent and teacher expectations of children and its impact on their school success (Bartholomew and Gustafsson, 1997: Carlson and Stenmalm, 1989; Kellaghan, Sloane, Alvarez, and Bloom, 1993; Knudson-Lindauer and Harris, 1989). Kellaghan et al (1993) have argued that the closer the convergence between parent and teacher expectation for early learning, the better for the child. Prior to the IEA project there had been no research in Ireland exploring the match between parent and teacher expectations for four-year-olds. A study by the INTO (1995) of junior infant teachers in Ireland found consensus among teachers concerning the most and least important aspects of the infant curriculum, but differences in practice when this was explored. *Inter alia,* this study did question teachers as to difficulties they faced in implementing the curriculum and a small percentage of respondents identified the low level of interest among some parents.

Instrument Design

As with the design of the Observation System, a development sub-group, made up of representatives of the NRCs, was established in 1988 to design the Expectations Questionnaire. The aim of the instrument produced was to answer the following research questions:

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[18] Some of the detail on the development of the Expectation Questionnaires has been taken from Senninger, M. M. (1999) 'Development of the Expectations Questionnaire' in D Weikart (ed.) What should young children learn? Teacher and parent views in 15 countries (Ypsilanti: HighScope Press), p. 47-58.

(i) Which areas of development do teachers and parents consider to be most important for four-year-old children?

(ii) How similar are teacher and parent views about which areas of child development are most important?

(iii) Which areas of child development do teachers think parents consider to be most important and vice versa?

(iv) In the opinion of teachers, for which areas of child development are teachers responsible and for which of them are parents responsible? What are parents' views about how responsibilities should be assigned? Do parents and teachers agree in the way that they assign responsibilities?

(v) To what extent are teachers expectations reflected in their day-to-day practice?[19]

To find answers to these questions two separate but related questionnaires were developed: one for teachers and one for parents.

Following a review of international research and through pilot studies the sub-group agreed eight areas of development (skill categories) commonly associated with preschool children:

(i) Language skills,

(ii) Motor/physical skills,

(iii) Pre-academic skills,

(iv) Self-assessment skills,

(v) Self-expression skills,

(vi) Self-sufficiency skills,

(vii) Social skills with adults

(viii) Social skills with peers.

For each of the eight areas of development agreement was achieved not only on the skill category but also on a brief definition and a list of characteristic sub-skills to be sure that the category would have a clear and unambiguous meaning in each country. In Ireland cards were made with the skill category and definition listed on one side and the sub-skills

[19] This study only reports on teacher expectations, parent expectations and parent beliefs about the role of the teacher.

listed on the back. Details of the definitions of the eight skill areas and the sub-skills as presented to parents and teachers are presented in Appendix 10.

Interview Procedure:

In the Irish study each data collector met with parents and teachers individually to complete the questionnaire in an interview situation. The interviews took less than thirty minutes to complete. A rank-ordering procedure was chosen to answer the research questions posed. During the interview respondents were presented with eight cards, illustrating the eight skill categories, the definitions and the sub-skills. The respondent was asked to rank-order the categories by first choosing the 'three most important' areas for preschool children, indicating which of these three was 'most important', 'second most important' and 'third most important'. Following this the respondents were asked to identify the 'three least important areas' from the remaining cards. They were asked to indicate the 'least important', 'second least important' and the 'third least important'. Finally, from the remaining two cards the respondents were asked to choose the 'most important' of the two. This procedure yielded a rank ordering of the eight areas of development from 'most important' through to 'least important'.

The respondents were then asked to look again at the categories they had identified as 'most important', 'second most important' and 'third most important'. For each of these they were asked to identify the two sub-skills that were 'most important' in that category. Following this step the interviewer asked teachers (when interviewing teachers) to consider the eight categories and choose the three they believed most parents in their setting would rank as 'most important', 'second most important' and 'third most important'. Parents were asked to do the same with respect to what they believed teachers would select. Finally respondents were asked to consider the eight categories and to identify the three most important categories that they believed were teacher responsibilities and the three that were parent responsibilities. The question was posed in such a way as to allow the respondents assign the same category to both teachers and parents or different categories to each.

Limitations:

Careful attention was given to the design and the procedures so that analysis across all participating countries in the IEA project was possible. However, the structure of the questionnaire and the specificity of the procedure did mean that respondents could not add

other areas of development they might consider important. The research team did not receive any information to suggest that this posed a problem in practice.

5.6 Data Collection:

The author, as NRC to the IEA project, collected data using all the instruments from a sample of children, parents, teachers and settings. This data collection experience occurred in advance of the selection and training of the data collectors to assist in the project. Using this experience and materials developed both in Ireland and the US the author engaged in the training of data collectors. Data collectors selected to assist in the IEA project came primarily from social science, education and early years backgrounds; some were trained primary school teachers, others worked in the preschool sector, most were students pursuing or having recently completed post-graduate degrees. They were contacted, in the main, via the colleges they were attending, by 'word-of-mouth', through local settings such as Education Centres or directly through some of the voluntary agencies supporting early education services. All data collectors were required to attend a training session.

5.6.1 Training the data collectors:

Initial data training sessions were held in Cork, Dublin and Galway from February to April 1994. Subsequent sessions were held in September and October 1994.

Training sessions lasted two to two and a half days. The author and her research team trained small groups of data collectors using project materials and practice sessions for each of the measures. Sessions commenced with a brief introduction to the project and the conceptual framework informing the design. This was followed by sessions to study the instruments, learn the observation techniques (through team-based practice sessions followed by training videos) and practise the data collection procedures. Data collectors were required to familiarise themselves with all the materials during the training period. Where possible each data collector 'piloted' the materials before the conclusion of the training session. The development of observation skills took up most time in the training sessions. Training sessions concluded with measures of inter-observer reliability: a reliability of 75-80% was achieved by all data collectors selected.

Because the research was carried out nationally, data collectors were recruited from throughout Ireland. Support measures were put in place to facilitate close contact with and between the data collectors: for instance, the project had a nominated phone line which

was staffed each weekday during the data collection period. The project team monitored data collection closely. Forty-two people successfully completed training and were involved in the data collection process, 32 women and 10 men.

5.6.2 Data collection procedures:

On completion of training each data collector was given a set of the IEA Guidelines for each instrument. In addition they were supplied with the data collection materials necessary to complete their first round of data collection. Additional material necessary for data collection was supplied by the research team as necessary.

Each data collector visited a setting for a minimum of four days if there were four target children in attendance and a minimum of two, non-consecutive days where there might be only one target child. All observations took place in the morning over a three to three-and-a-half hour period. Child development assessment tests were usually carried out on the second and fourth days and interviews with parents, principals and teachers were arranged to suit all parties but within the four data collection days where at all possible. The observations of the adult behaviour and the individual target children were taken at different times on the two days to allow for a variety of behaviours to be observed. Over the two days a total of 40 minutes of observation data was recorded for the teacher and a total of 40 minutes of observation data for each target child. In most settings a total of 6 -7 hours MOT data was recorded. It was a requirement that each data collector record at least 4 hours of MOT observation data over the two days.

Data collection took place between March 1994 and June 1995.

5.7 Reliability and Validity:

The importance of reliability and validity was discussed with data collectors on training and brief details of the development and piloting procedures for each instrument were given. All collectors were advised to contact the research team, should any questions arise following the training. The area of most concern with respect to reliability and validity was the observation schedule.

Good, reliable observations are those where observations are recorded in a consistent way and where there is good inter-observer reliability. Reliability is necessary but not sufficient to guarantee validity. Observers need to make biases explicit and endeavour to

minimise them. In discussing the scientific value of observation Pellegrini (1996) emphasises the importance of 'good' description, which maximises reliability and validity. Reliability can be measured in terms of inter-observer reliability agreement and the use of a number of observers. In the IEA study reliability of observational measures was judged in terms of consistency, consistency within (intra-observer) and between (inter-observer) the individual observers over the training period. The percentage agreement was used as the basis for intra and inter-observer reliability. Although the use of percentage of agreement has been criticised on a number of grounds, such as the failure to correct for chance agreements and the inability to compare percentage of agreements to any criterion, it is still useful at a simple level as it gives us a rough and ready indicator of agreement (Pellegrini, 1996, p. 106). In the measurement of inter-observer reliability the IEA team required a 75-80% consistent agreement.

Pellegrini identified three external factors that could affect reliability: observer fatigue, observer drift and category definition. Care was taken to address the first two factors in our training sessions through discussing them and drawing attention to the need to monitor the number of settings any collector was assigned. The issue of consistency in category definition proved a particularly valuable training tool. The agreed coding categories for observed behaviour and their dimensions were made available to all trainees at the commencement of the training sessions. Within the Irish study some additional dimensions with new codes were added, notably those relating to the Irish language. The training videos[20] were developed in such a way as to provide dilemmas for discussing code-categories and this offered opportunities for refinement in code category selection. There was extensive exposure to training videos in observer training. An unseen, clearly shot video piece with good sound was used to test for inter-observer reliability, it was accompanied by an already coded schedule from the ICC team against which trainees were measured.

Validity refers to the 'truth value' of the data presented and is more difficult to measure than reliability. The 'truthfulness' or validity of an observation record depends on the clarity of understanding of the aim of the observation and the social context in which the validity question is posed. For example, in play observations, some studies categorise

[20] The Irish project used training videos developed by the ICC. These were videos of four-year-olds in US settings and were accompanied by comprehensive training materials. While there were some initial concerns about possible difficulties associated with American accents this proved not to be a problem in reality.

rough-and-tumble play in terms of play fighting, whereas others consider it part of the category of aggression (Pellegrini, 1996, p. 113). At training sessions the team worked closely with data collectors to ensure clarity and commonality of purpose in category identification and coding. Furthermore, the ICC and its link with the NRC and the research team was important as the clarity of coding was checked on each submitted observation record by the national team and reported to the ICC. Unresolved issues were discussed with the ICC and final decisions arrived at by agreement. Where uncertainty remained the record was removed from the analysis.

Validity cannot be measured directly in the same way reliability can. In coding observed data there is a role for inference. In training the data collectors were advised about the importance of validity and were trained to record only what they saw. Being in the social context, however, gave them an insight to how best to code the recorded activity as they had a context which was not available to the research team. Where there were queries about a code this capacity for inference was called upon.

In addition to the three threats outlined for reliability Pellegrini identifies two additional threats to validity. The first is reactivity – the extent to which the subjects of observations act differently simply because they know that they are under observation. Tudge (1992) asserts that where children do not react as though teachers are behaving out of the ordinary when the observations were taking place it is fair to assume that the behaviour of the teachers is, in general, in line with their usual behaviour. In relation to observing children Tudge suggests that four-year-olds are still too young to be able to self-monitor their behaviour and argues that it is fair to assume that they do not change their behaviour to a significant degree in the presence of the observer. The research team received no reports of reactivity in either adults or children.

The second threat specific to validity is observer bias. This bias will influence the categories used by the observer in coding the data. Mechanisms to control this were built into the coding process. All data submitted to the Irish research team by the data collectors were coded before data input. Coding was further checked when input data was forwarded to the ICC for international analysis. The ICC provided a very valuable data checking service which challenged each NRC to be as accurate as possible in their use of codes.

5.8 Data Analysis:

All the data collected for each target child at each setting was allocated a specific code by the data collectors according to the IEA Pre-primary Project Guidelines contained in comprehensive coding manuals. For instance, all Non-designated Disadvantaged Preschools were labelled using numbers in the '100s' range, Designated Disadvantaged Preschools were given numbers in the '200s' range, Non-designated Disadvantaged Schools were labelled in the '300s' and Designated Disadvantaged Schools were labelled in the '400s'. This allowed settings to be distinguished as either schools or preschools and as either disadvantaged or non-designated disadvantaged. Each target child was given a unique ID number. This was critical to the efficient analysis of data in the Phase 2 study, but also because it was this number that allowed for cross-referencing data gathered on children at age four with that gathered at age seven.

All codes were checked by the Irish research team and then entered on a specifically formatted disk and sent to the ICC for inclusion in the international data set. The disks contained SPSS PC+ dictionary files for each category of information – provider survey, expectations, family background, observations and developmental status measures. Copies were retained in Ireland for local analysis. For technical reasons the original Phase 2 data for Ireland was analysed using a statistical package called Data Desk (version 5.0.1, 1995) which runs on Macintosh computers. Some of the analysis and tables presented in this thesis have been provided on request from the statistical support team at the ICC and will be identified.

Analysis of relationships between variables:

The overall IEA Preprimary Project from which the sample for this study was derived was designed to allow for analysis of the relationship between findings from the different instruments. Of particular interest is the relationship, if any, between the structural or setting context variables and the process variables observed within the setting context. For this study, and based on the review of the literature and discussion between the International Coordinating Committee of the IEA project and the National Research Coordinators, four aspects of the setting were selected as representing the setting context within which the activities and interactions of adults and children took place. These were group size and adult:child ratio; equipment and materials; teacher characteristics and teacher expectations.

Using data from the Provider Survey and the Expectations Questionnaire the findings for the four selected aspects of the setting context were collected. The variables agreed and selected to represent the four aspects of setting context in the analysis were group size/ratio; variety of materials; teacher characteristics and teacher expectations.

The setting process variables selected for the analysis were drawn from the observation data and were selected to represent the three aspects of the setting process. The variables were selected and agreed in consultation with the ICC. Eight variables were selected from the MOT data to represent the activities adults proposed for children and how they grouped children; the four variables selected from the CA data represents the degree to which children were actively engaged and the level of interactions with adults and other children and the eight AB variables selected represent the strategies used by the adults in their interactions with children.

The additional analysis necessary for this study was carried out by the IEA statistical team in conjunction with the author. Unlike the descriptive analysis carried out for the other elements of the study the relationship analyses were, in general, carried out by country rather than by setting type. This decision was taken as the review of data suggested that the variance between types of group settings in a country was usually smaller, compared to the variance within these types of setting. This was not the case for the Irish data as the variance between setting types (preschools and schools) was larger than the variance within type. The data presented in this study is the analysis of the national school settings.

The method of analysis[21] commenced with correlating the selected process variables with the selected context variables. Regression analysis was then conducted with each of the process variables as dependent variable and variables representing the four aspects of context as independent variables. For instance, if the expressive materials and adults' expectation of child preacademic development were found to be correlated with amount of preacademic activity proposed by the adult, the two identified context variables that represented equipment and materials and adults' expectations, together with adult:child ratio and adults' level of education, which represented the other two aspects of setting context, would be included as independent variables in the regression analysis for adult-proposed amount of preacademic activity. The results of such analysis can indicate

[21] I would like to thank, in particular, ZongPing Xiang from the statistical team for this concise description of the method of analysis.

whether a process variable, such as the proposed amount of preacademic activities, is associated with any context variable (variety of expressive materials and or the adult expectations for child preacademic activities), while controlling for potential influence of other major setting context variables. As the unit of analysis was the class setting the child activity data collected at child level were aggregated to class level for the analysis.

5.9 Ethical Issues:

The IEA project is a large international study. It is longitudinal and is exploring the lives of a large number of children, their families and their teachers. As such, it has had to address the ethics of such a study and ensure that it did not, in either its aim or its execution, infringe the rights of participants to be respected and listened to. Ethics in social research has a long established history (Alderson, 1995; France, Bendelow & Williams, 2000; Hill, 1999; Homan, 1991) and ethical codes have been developed by different professional and research groups to maintain control of standards and practice. However, as previously discussed, children as objects of research have, until recently been ignored as active participants in research. In this regard ethical codes for working with children are only being developed. Rarely, for instance, have children's consent or opinions been secured in relation to their participation in a research study, research design or implementation.

The IEA project, at an international and a national level, was designed with a view to improving our understanding of the early experiences of children and its impact on later development. The international research team endeavoured, at all times, to be sensitive to cross-cultural differences and respectful of diversity when developing materials and methodologies. Indeed, this feature of the study has been favourably commented on (Kagitcibasi, 1994). However, despite the fact that children were the main focus of the study, they were not involved, except as part of the pilot studies, in the design of the study.

When considering the ethics of researching with children it is necessary to make explicit statements of the ethical issues, general and specific, which need to be considered. In her study on this topic Alderson (1995) identified ten topics she believed needed to be borne in mind be researchers. These ten were in turn reduced to a cluster of four by Hill (1999) in his paper on ethical and methodological considerations in researching children's experiences. These cluster were:

(i) Involvement of children in the research;

(ii) Consent and choice;

(iii) Possible harm or distress

(iv) Privacy and confidentiality.

5.9.1 Involvement of children in research:

Hill (1999) points out that it is rare to involve adults in the design of research investigating their experiences and so it comes as no surprise that children are rarely included in research design. With increased attention to the inclusion of children in research about them there has been a growth in the use of focus groups and the like to inform research design. Neither children nor adult participants were involved in the design of the IEA project.

Consent and Choice

As research with children develops it is recognised as good practice to obtain informed consent from children, provided they have the understanding to give it. This is in line with the aspirations of Article 12.1 of the *UN Convention on the Rights of the Child (1989) and the Helsinki Declaration on Biomedical Research* (1994). However, the question remains – at what age are children able to give informed consent? In the IEA study at Phase 2 the children being studied were four years of age. They were considered too young to be asked directly for their consent and, in any event, they could not have been asked without also seeking parental consent. The Irish research team sought written parental consent through the settings for all children within the setting who were between 4 years and 0 months and 4 years and 11 months of age. This procedure required the cooperation of the class teacher. Letters were given to teachers, who distributed them, and parents were asked to return the completed forms to the teacher. There are a number of difficulties with this procedure. In particular it introduces an additional adult 'gatekeeper' who can influence what parents are asked for their permission and can influence the response to the request by way of verbal comment about the project. The research team had to accept the *bona fide* of the teachers in this connection and did receive a sufficient number of consent forms to allow for the random sample selection necessary. Because the project was longitudinal it was necessary to refer to this in the initial parental consent request. The degree to which children were consulted was reviewed as work on Phase 3 of the study progressed.

Where parental consent was given there was a possibility that the selected child might not wish to participate in the study. This did occur in a small number of cases – specifically when the child was invited to participate in the child development status element of the project (which might necessitate moving from the classroom to another room). Where a child became upset the data collector was advised to select another child using the agreed selection procedure. Where this happened they were required to complete all other elements of the study including the observations and interviews in respect of the 'new' child. On no account was any child to be forced to cooperate and, where appropriate, any information already gathered on the child was to be destroyed.

Opinions differ on the desirability of giving children gifts or presents for their cooperation. The research team did discuss this issue and decided against it. Rather each family was told that they were part of an ongoing study and that the project would keep in touch with them. This was part of the project tracking system and each family continues to be sent cards intermittently which are addressed to the child. In addition each setting received a summary of the results of the project once the data had been published and were encouraged to share it with the parents and children.

Possible harm or distress

At the time of Phase 2 data collection there was little public discussion about the right of children to express their concerns to adults, or about child abuse. The research team received no reports of any child disclosing information to data collectors which they felt needed to be forwarded to a third party. At training sessions we did discuss how to handle situations where children became upset and how to respond if some harmful behaviour was observed. Where children became upset or found the exercise stressful they were allowed to withdraw from the study. This did arise in a small number of cases. Where harmful behaviour was observed data collectors were advised that the priority was the well being of the child and they were free to disrupt observation, for instance, if they considered it necessary. There were no reports from data collectors of any such instances.

At the time of data collection there were no procedures in place for securing Garda Clearance for researchers and it was not something the research team considered. Procedures have now been put in place, within our department and research centre, to minimise the likelihood that any adult might use the research process to gain access to children for other than research purposes.

Privacy and Confidentiality

There are two levels at which this issue is of importance. In the first instance it is important for the child, parent and teacher to know that the data collected in the course of the study would remain confidential. The study was not about comparing individual children or teachers and neither was it about comparing individual settings. This was made clear to all participants and confirmed by our forwarding summary reports of the study to all settings.

On another level, and of particular importance to children, it was made clear that no information gathered during data collection would be discussed with anyone else. For instance some parents were anxious to get assessment scores from the child developmental status measures and it had to be made clear that these were not assessments but rather the collection of baseline data. In addition it was important to families that information gathered during the family background interview was confidential. The issue of confidentiality was discussed at length with data collectors during their training. There is always the possibility that some issue might arise in confidence which researchers feel should be brought further. There is some debate about how to best address this and Alderson (1995) suggest that if a breach of confidentiality is necessary, it should only occur in full consultation with the child. How to address the situation where a child refuses permission remains a key ethical dilemma facing researchers.

5.10 Conclusion:

In light of the weight of evidence for the value of considering children as active agents in their own development and given the strength of belief in the right of children to participate in research when it impacts on them the IEA project could have been more proactive in accessing the views and advice of children when designing the methods and instruments. However, the project was designed in the early 1990s when such awareness was not widespread and, under the circumstances the author believes the study to be ethically sound. In the case of the Irish element of the study, from which this work is drawn, the author and research team was ethically sensitive to the way in which the project was sampled, implemented, analysed and disseminated.

Taking a sub-sample of the Irish data set from the IEA Preprimary project, this study extends consideration of the results to examine the activities of Irish four-year-olds in

junior infant classrooms, to describe the contexts within which these activities occur and to consider the implications for young children's learning. In addition it is designed to facilitate discussion and analysis of the results of this examination in relation to what we know about young children's learning from recent research in developmental psychology and early education.

This chapter has charted the rise of interest of research with young children and specifically considered the contribution made by early educational research to meeting the methodological and ethical challenges posed and has reviewed the design and methods used in early research studies and identified their limitations. The IEA project was an appealing project in that the conceptual framework, the design and the methodology developed, acknowledged and, indeed, anticipated many of the issues that have been the focus of early educational research, discussion and debate over the last decade. In particular the balance of qualitative and quantitative methods developed by the project reflects a commitment to capturing the complexity of the contextual and interactive processes that are key to the positive development of young children in their early years settings. The methods and instruments of relevance to this particular study have been described and the process of sample selection and data collection is also presented. Finally, the limitations of the study and the ethical considerations that informed the work are presented.

CHAPTER 6

RESULTS

Introduction:

This study examined the activities of 203[22] children and their teachers in 55[23] junior infant classrooms in Ireland. The results are presented in three sections. In the sample section descriptive data about the children, their teachers and the settings is presented, including a review of teacher expectations for four-year-olds[24]. Following this the observations data is presented under the heading of Management of Time (MOT), Child Activity (CA) and Adult Behaviour (AB). The final section presents findings on the relationship between different observational data. The results presented include matrices for MOT/CA and MOT/AB and analysis of the relationships between selected setting context and process variables.

6.1 The Sample:

6.1.1 Children and their families:

The children in the study were all aged between 4 years and 0 months and 4 years and 11 months at the time of the study. Of the 203 children in the sample, 101 attended Non-Designated Disadvantaged (NDD) schools and 102 attended Designated Disadvantaged (DD) schools. Eighty-five percent of the children came from two-parent families (married and living with spouse); 5% of the children were living with a separated parent and 9% were living with parents who had never married. One percent of the sample was living with a widowed parent.

For the complete sample of children the mean number of years of full-time education of the mother was 12 years. For those children attending DD schools the mean number of years of full-time education of mother was 11 years while for those attending NDD schools

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[22] While the total child sample is 203 the actual sample in the findings presented may vary depending on the data received.

[23] While the total sample of classrooms was 55 the actual sample presented may vary depending on data received.

[24] The information presented in this first section is drawn from the original data gathered using the Provider Survey and the Expectations Questionnaire and reported in Hayes, N., O'Flaherty, J. & Kernan, M. (1997) A Window on Early Education in Ireland: The First National Report of the IEA Preprimary Project (Dublin: Dublin Institute of Technology)

the figure was 13 years. Sixty-five percent of the mothers of the sample of children attending DD schools were not in paid employment at the time of the study, with 35% of mothers in some level of employment. Forty-seven percent of mothers of children attending NDD schools were not in employment at the time of data collection.

The mean amount of full-time education of fathers of the sample was 12 years, with fathers of children attending DD schools attaining 11 years while fathers of those children attending NDD schools reported 13 years of full-time education. Thirty percent of fathers of children attending DD schools were not in employment at the time of the study compared to 18% of fathers of children attending NDD schools.

6.1.2 The Teachers:

All the teachers working directly with the children in the classroom were women and 47% of the principals were men. The mean age for the teachers in this sample was 39 years. Teachers tended to be younger in DD schools, where the mean age was 35 years, compared to 43 years in NDD schools. All the teachers, with the exception of one substitute teacher in a NDD school, were fully trained primary teachers. This training prepares teachers to teach children in the age range from 4-12 years. A majority of teachers reported that they had not received any additional recent training in areas such as motor development, cognitive development, motivation for learning or readiness skills. All the teachers had had some experience of working with children of 3-5 prior to the study.

6.1.3 Teacher and parent expectations and beliefs:

Teachers were asked about their expectations for four-year-old children. Overall more teachers selected 'social skills with peers' than any other skill within the top three most important skill for children to learn. Table 6.1 presents the number and percentage of teachers who ranked each of the eight skills areas in the top three most important skills. Self-expression and preacademic skills were prominent in the three most important skills ranked while motor-physical and social skills with adults were least likely to ranked as most important. Across settings the most noticeable difference was in the area of preacademic skills, which was ranked in the top three most important skills by 60% of teachers in DD schools compared to 27% in NDD schools. The skill category ranked as most important by the highest percentage of teachers varied across the two settings.

Table 6.1: Percentage of teachers who ranked each of the eight areas of development within the top three.

Area of development	Overall	DD schools	NDD schools
Preacademic	44% (N=51)	60% (N=25)	27% (N=26)
Motor/Physical	18% (N=51)	15% (N=26)	20% (N=25)
Self-expression	43% (N=47)	40% (N=25)	45% (N=22)
Language	62% (N=49)	65% (N=23)	58% (N=26)
Social Skills with Peers	72% (N=50)	72% (N=25)	72% (N=25)
Social Skills with Adults	19% (N=49)	8% (N=24)	29% (N=24)
Self-sufficiency	37% (N=49)	38% (N=24)	36% (N=25)
Self-assessment	22% (N=50)	15% (N=26)	29% (N=24)

Thirty two percent of teachers in DD schools ranked the development of language skills as most important while only 13% of teachers in NDD schools did. The highest percentage of NDD teachers (23%) ranked social skills with peers as the most important skill. Table 6.2 details the pattern of responses.

Table 6.2: Percentage of teachers in each setting ranking their most important skill

Area of development	Overall	DD schools	NDD schools
Preacademic	12.1% (N=7)	14.3% (N=4)	10% (N=3)
Motor/Physical	5.2% (N=3)	3.6% (N=1)	6.7% (N=2)
Self-expression	6.7% (N=4)	3.6% (N=1)	10% (N=3)
Language	22.7% (N=13)	32.1% (N=9)	13.3% (N=4)
Social Skills with Peers	22.4% (N=13)	21.4% (N=6)	23.3% (N=7)
Social Skills with Adults	1.7% (N=1)	0% (N=0)	3.3% (N=1)
Self-sufficiency	10.4% (N=6)	10.7% (N=3)	10% (N=3)
Self-assessment	8.5% (N=5)	7.1% (N=2)	10% (N=3)
Missing Responses	10.2% (N=6)	7.1% (N=2)	13.3% (N=4)
Total	100% (N=58)	100% (N=28)	100% (N=30)

Using the same methodology, parents were asked to rank those skills they considered most important for their four-year-olds. Of all parents who responded, more parents chose preacademic skills than any other, with 23% giving it their top ranking. There was some difference across settings, with 28% of DD parents ranking it as most important, compared to 17% of parents whose children were attending NDD schools. The next most important

categories identified by parents were social skills with peers, at 20%, and social skills with adults, at 15%

Table 6.3: Percentage parents in each setting who chose each of the eight skill categories as most important.

Area of development	Overall	DD schools	NDD schools
Preacademic	22.5% (N=45)	27.7% (N=28)	16.8% (N=16)
Motor/Physical	1.5% (N=3)	1.98% (N=2)	1.05% (N=1)
Self-expression	6.6% (N=13)	4.95% (N=5)	8.42% (N=8)
Language	11.8% (N=23)	7.92% (N=8)	15.8% (N=15)
Social Skills with Peers	20.4% (N=40)	21.8% (N=22)	18.9% (N=18)
Social Skills with Adults	15.25% (N=30)	16.8% (N=17)	13.7% (N=13)
Self-sufficiency	8.6% (N=17)	10.9% (N=11)	6.32% (N=6)
Self-assessment	13.4% (N=26)	7.92% (N=8)	18.9% (N=18)
Missing Responses	0% (N=0)	0% (N=0)	0% (N=0)
Total	100% (N=196)	100% (N=101)	100% (N=95)

Teachers in both settings seem to agree that social skills with adults are relatively unimportant, as none of the teachers in the DD schools ranked it as most important and only 3% of teachers in NDD schools considered it most important. Details of what teachers considered the least important skills for four-year-olds are outlined in Table 6.4 below.

Table 6.4: Percentage of teachers in each setting ranking their least important skill

Area of development	Overall	DD schools	NDD schools
Preacademic	8.5% (N=5)	7.1% (N=2)	10% (N=3)
Motor/Physical	13.8% (N=8)	14.3% (N=4)	13.3% (N=4)
Self-expression	5.2% (N=3)	7.1% (N=2)	3.3% (N=1)
Language	3.5% (N=2)	7.1% (N=2)	0% (N=0)
Social Skills with Peers	0% (N=0)	0% (N=0)	0% (N=0)
Social Skills with Adults	15.3% (N=9)	10.7% (N=3)	16.7% (N=5)
Self-sufficiency	11.9% (N=7)	7.1% (N=2)	20% (N=6)
Self-assessment	27.8% (N=16)	35.7% (N=10)	16.7% (N=5)
Missing Responses	13.7% (N=8)	10.7% (N=3)	16.7% (N=5)
Total	100% (N=58)	100% (N=28)	100% (N=30)

Thirty-six percent of teachers in DD schools identified self-assessment skills as the least important skill with 17% of teachers in NDD schools ranking it least important and 20% ranking social skills with adults as least important. Comparing Table 6.2 and Table 6.4 reveals that 7% of teachers at DD schools ranked self-assessment skills as most important with 10% of teachers at NDD schools ranking it so.

Most parents ranked the development of motor/physical skills as least important (39%), with 31% of parents with children attending DD schools giving it this ranking compared to 47% of the parents whose children attended NDD schools. Self-expression skills were the next least important, with 31% of responding parents ranking it as least important. See Table 6.5 below for further detail.

Table 6.5: percentage parents in each setting who chose each of the eight skills as least important

Area of development	Overall	DD schools	NDD schools
Preacademic	8.3% (N=17)	6.86% (N=7)	9.90% (N=10)
Motor/Physical	39.9% (N=79)	31.4% (N=32)	46.5% (N=47)
Self-expression	15.2% (N=31)	18.6% (N=19)	11.9% (N=12)
Language	8.8% (N=18)	7.84% (N=8)	9.90% (N=10)
Social Skills with Peers	1.9% (N=5)	0.980% (N=1)	3.96% (N=4)
Social Skills with Adults	3.4% (N=7)	5.88% (N=6)	0.990% (N=1)
Self-sufficiency	5.6% (N=12)	9.80% (N=10)	1.98% (N=2)
Self-assessment	24.3% (N=25)	16.7% (N=17)	7.92% (N=8)
Missing Responses	0% (N=0)	0% (N=0)	0% (N=0)
Other/No Information	4.4% (N=9)	1.96% (N=2)	6.93% (N=7)
Total	100% (N=203)	100% (N=102)	100% (N=101)

Parents were also asked to rank the most important skill they felt it was the responsibility of the teacher to develop in the child. Fewer parents responded to this question (N=152) than to any other in this section. Of the respondents, 30% and 25% of parents with children in DD and NDD schools respectively ranked social skills with adults as most important. Results, presented in Table 6.6 below, suggest greater variability of views on this question across the sample of parents: of those with children in NDD schools 17% of parents ranked language skill and the same percentage (17%) ranked self-assessment as most important for teachers to develop in the child.

Table 6.6: Most important skill considered by parents in each setting as teachers' responsibility to teach

Area of development	Overall	DD schools	NDD schools
Preacademic	10.4% (N=16)	11.1% (N=9)	9.86% (N=7)
Motor/Physical	2.4% (N=4)	4.94% (N=4)	0% (N=0)
Self-expression	4.6% (N=7)	3.70% (N=3)	5.63% (N=4)
Language	12.5% (N=17)	6.17% (N=5)	16.9% (N=12)
Social Skills with Peers	16.6% (N=26)	23.5% (N=19)	9.86% (N=7)
Social Skills with Adults	22.5% (N=42)	29.6% (N=24)	25.4% (N=18)
Self-sufficiency	12.6% (N=19)	9.88% (N=8)	15.5% (N=11)
Self-assessment	14% (N=21)	11.1% (N=9)	16.9% (N=12)
Missing Responses	0% (N=0)	0% (N=0)	0% (N=0)
Other/No Information	0% (N=0)	0% (N=0)	0% (N=0)
Total	100% (N=152)	100% (N=81)	100% (N=71)

There was more agreement among parents of children attending DD schools, with 24% of parents ranking social skills with peers as important in this context. Among this sample of parents the next most important skills identified for teachers were preacademic and self-assessment skills, each ranked top by 11% of parents. Ten percent of parents of children in NDD schools ranked preacademic skills as the most important for teachers to develop. The percentage of parents, in DD schools in particular, ranking preacademic skills as most important for teachers to develop is somewhat lower than one might expect, given that it was the skill that was ranked most important by the highest percentage of parents in this group. Previous analysis of this data investigated the degree of harmony between parental and teacher expectations for four-year-olds and found a low level of congruence between parental beliefs and those of teachers (Hayes et al., 1997).

6.2 The Settings:

There were 55 schools included in this study, 15 of which were single sex schools. All schools indicated that they were open for 38 weeks of the year. The children spent an average of 23.5 hours per week at school with those attending DD schools spending 24.2 hours per week compared the children at NDD schools who spent 22.8 hours per week at school. Most of the schools (96%) were non-fee paying but 70% of DD schools and 77% of NDD schools did report that parents paid additional charges to cover such things as

music, gym, field trips. Fifty-four percent of DD schools and 12% of NDD schools provided meals to children although no detail on the nature or quality of the meals was gathered. Four percent of DD schools and 17% of NDD schools provided transport to and from the school.

All the children in the sample were observed in their junior infant classroom. Eighty eight percent of the schools in this study indicated that the junior infant classrooms were designed for use by the children. Eighty percent of DD schools and 96% of NDD schools reported that the classrooms were furnished with child-sized tables and chairs, child-sized toilets and sinks and shelves low enough for children to reach safely. Seventy nine percent of teachers indicated that they provided special play areas within the classroom and all the schools had access to an outdoor play area.

6.2.1 Equipment and materials:

Teachers were given an extensive list of equipment and materials (116 items, see Appendix 11) and asked to note what was present in their setting and available to the children. Items were grouped into six main categories: gross motor, fine motor, imaginative play, art/creativity, music and audio-visual, pre-academic games/materials. There was quite a high proportion of missing information on this item, particularly from teachers in NDD schools. It is impossible to know whether this indicates a lack of the equipment/materials or whether it reflects the fact that respondents were discouraged from responding by the length of the list and the time involved. The tables below present the percentages of positive responses by teachers to the availability of a sample of 33 items across each of the categories. The sample of 33 reflects the most widely reported items across the settings.

Table 6.7: Availability of gross motor equipment in classrooms

Equipment	DD Schools (N=27)	NDD Schools (N=29)
Slides	7%	10%
Climbers	30%	21%
Pedal Cars	4%	0%
Balls	63%	52%

While all school reported access to outdoor play space it is clear from Table 6.7 that there was limited gross motor equipment available in the space. For instance, only two (7%) DD

schools and three (10%) NDD schools reported the availability of slides. None of the NDD schools had pedal cars available to children and balls were the most common materials reported.

The availability of fine motor equipment and materials is presented in Table 6.8. The most common materials reported were puzzles, small construction toys and pegboards and these were more common in DD schools than in NDD schools. Sixty-six percent of the sample reported that they had no sand box toys and 80% no water-table toys; only three (10%) of NDD schools reporting the presence of a water table and toys.

Table 6.8: Availability of fine motor equipment in classrooms

Equipment	DD Schools (N=27)	NDD Schools (N=29)
Big Building Toys	30%	14%
Water-Table Toys	30%	10%
Sandbox Toys	33%	35%
Puzzles/Table-Top	70%	55%
Small Construction	70%	55%
Pegboards	63%	48%

The category of imaginative/dramatic play included items such as play props, dress-up clothes, play-house and child sized play furniture. Less than a third of the sample of schools – 32% - reported availability of play props and this was the most common equipment of this type reported by NDD schools. DD schools reported a 44% availability of dress-up clothes.

Table 6.9: Availability of imaginative dramatic play equipment in classrooms

Equipment	DD Schools (N=27)	NDD Schools (N=29)
Play Props	30%	31%
Dress-up Clothes	44%	10%
Play House	19%	17%
Child-sized Furniture	7%	7%

Art materials were more commonly available in schools than equipment for gross motor, fine motor and imaginative play, although none of the items presented were available in all schools. The most commonly reported items were crayons, paint and paper. There was a difference in availability across the schools with 74% of DD schools reporting the

availability of crayons compared to 55% of NDD schools. The least common item in the schools was an art easel, three (11%) DD schools and two (7%) NDD schools recorded a positive response.

Table 6.10: Availability of art materials in classrooms

Equipment	DD Schools (N=27)	NDD Schools (N=29)
Crayons	74%	55%
Watercolour Paints	67%	45%
Variety of Paper	63%	55%
Easels	11%	7%
Playdough	56%	48%
Clay	22%	21%
Scissors	59%	45%

Most schools reported the availability of some music and audio-visual materials and 11 (41%) DD schools and 9 (31%) NDD schools reported that children had access to computers[25], though not all on a daily basis. Of the items identified, schools were least likely to have real musical instruments available, just 19% of the DD schools and 7 % of the NDD schools. DD schools seemed to be generally better equipped than NDD schools with respect to audio-visual equipment such as tape recorders, televisions and videos.

Table 6.11: Availability of music/audio-visual equipment in classrooms

Equipment	DD Schools (N=27)	NDD Schools (N=29)
Rhythm Instruments	48%	38%
Real Instruments	19%	7%
Tapes/records	48%	41%
Tape recorder	74%	52%
TV	67%	31%
Video player	67%	41%
Computer	41%	31%

The data for preacademic and reading items suggests that some caution is necessary in interpreting the data. 82% percent of DD schools reported the availability of workbooks compared to 52% of NDD schools. Of the 29 teachers in the NDD schools who

[25] The data for this study was collected before the Department of Education and Science commenced the primary school computer initiative.

responded, just one indicated that workbooks were not available and 13 teachers did not supply any information on workbooks.

Table 6.12: Availability of preacademic and reading materials in classrooms

Equipment	DD Schools (N=27)	NDD Schools (N=29)
Number Games/Toys	74%	55%
Letter Games/Toys	67%	48%
Pencils/Pens	70%	48%
Books	85%	52%
Workbooks	82%	52%

The percentage of teachers indicating that books were available to children was 85% in DD schools and 52% in NDD schools.

The results from this section of the study concur with the findings of the INTO (1995) that infant classes are, in general, poorly resourced. The data itself, and the limitation in respect of responses, suggests the need for a more targeted study into the availability and use of materials and equipment within the junior infant classes.

6.2.2 Group size and adult:child ratio:

The average group or class size within the school sample was 25 with DD schools reporting an average of 24 children per class and NDD schools reporting an average of 27. Across the sample the class size ranged from a minimum of 11 in a DD school to a maximum of 34 children in a NDD school. The average adult:child ratio for DD schools

Table 6.13: Adult-child Ratio across settings

Adult:Child	DD Schools (N=27)	NDD Schools (N=28)
Mean	1 : 25	1 : 26
Minimum	1 : 11	1 : 15
Maximum	1 : 30	1 : 34

was 1:25 and for NDD schools 1:26, with the maximum figure of 1:30 and 1:34 for DD and NDD schools respectively.

6.3 Observation Findings:

The findings presented in this section include the data from the Management of Time (MOT) system, the Child Activity (CA) system and the Adult Behaviour (AB) system.

6.3.1 Management of time observation findings:

The management of time (MOT) observation schedule was designed to record how adults organise children's time in the classroom and how children are organised for different activities. The data was collected continuously over an entire morning on two non-consecutive days. The total time per setting ranged from 6 – 7 hours. The data collector recorded the activities proposed[26] by the teacher to begin the morning and noted each change of proposed activity, and the time of change, throughout the observation period. The list of MOT observation system categories is presented in Appendix 8. The categories, with some examples are presented below.

List of Management of Time categories with examples:

Physical	
Gross Motor:	running, climbing
Fine Motor:	puzzles, building with small blocks
Expressive	
Dramatic Play:	role plays, moving like an animal
Arts and Crafts:	painting, cutting/gluing materials
Music:	singing, playing instruments
Storytelling/Language	
Listening	to stories, rhymes
Preacademic	
Reading:	reading letters, independent reading
Writing:	writing letters, practice with pencils
Numbers/maths:	counting, adding/subtracting
Physical Science:	planting seeds, weather lessons
Social Science:	visiting local fire-stations
Other:	calendar time, memory games
Religious	**Praying, attending services**
Media-related	**Watching film-strips or television**
Personal/Social	
Personal Care:	washing hands, eating snack
Social:	show and tell, sharing materials
Discipline:	sitting in Time Out, discussing misbehaviour
Domestic/Economic	
Domestic:	set-up/clean-up of materials
Economic:	farming, selling produce
Transitional	**Lining up, moving between activities**
Waiting	**Waiting in line, waiting for materials**
Free Activities	**No specific activities proposed**
Mixed Activities	**Two or more activities at the same time**

The observation data provide information to answer the following questions:

(i) What types of activities do teachers propose for children?

[26] The word 'proposed' is used to refer to any activity or activities planned or suggested by the adult for the children. It varied from proposing free choice across a wide range of activities available to individual children or groups to proposing specific activities for all the class to attend to at the same time.

Proposed Type of Activity.

(ii) How do adults organise children for activities (whole-group, part-group)?

Proposed Group Structure.

(iii) To what degree do adults plan for children to watch/listen or participate in the various activities proposed

Proposed Type of Involvement.

The findings will be presented under these three broad headings.

(i) ***Type of Activity:***

Table 6.14 shows the average percentages of time that teachers in DD and NDD schools propose that children spend in each of the general categories.

Table 6.14: Management of Time percentages (mean, median and range) in each general teacher-proposed category in DD and NDD schools.

	DD (N = 26) (164 hours)			NDD (N = 26) (151 hours)		
Category	Mean %	Median %	Range %	Mean %	Median %	Range%
Physical	5	0	0-19	7	5	0-22
Expressive	14	13	0-35	7	7	0-25
Storytelling/Language	7	5	0-17	8	6	0-26
Preacademic	23	22	2-49	32	28	10-75
Religion/Ethics	2	1	0-11	3	1	0-21
Media-related	2	0	0-13	1	0	0-8
Personal/Social	17	18	3-32	14	12	1-39
Domestic/Economic	5	4	0-22	3	2	0-12
Transitional	4	0	0-17	3	1	0-11
Waiting	2	1	0-11	1	0	0-8
Free activities	7	6	0-34	6	3	0-30
Mixed activities	12	10	0-28	15	12	0-44
Other/No Information	0	0	0	0	0	0

Teachers proposed that children spend most of their time in *preacademic* activities (23% in DD schools and 32% in NDD schools). In DD schools the next most proposed category was *personal/social,* 17% while in NDD schools the category was *mixed activities* at 15%. The *mixed activity* category was the third most frequently proposed activity in DD schools (12%) while the third most frequently proposed activity in NDD schools was *personal/social* at 14%. The *expressive* category was proposed by teachers in DD schools 14% of the time and 7% by teachers in NDD schools. Neither of the settings proposed *free activity* in the top four categories, which accounted for 66% and 69% of proposed activities

in DD and NDD schools respectively. It was proposed 7% of the time in DD and 6% of the time in NDD schools. The least often proposed categories in both settings were *waiting* and *media-related* at 2% in DD schools and 1% in NDD schools. The *religious, ethics* category in DD schools was also proposed for 2% of the time.

The range of time allocated to each general category of activity shows some variability across the settings. In the *preacademic* category, for instance, the range in DD schools was 0-49 whereas it was 10-75 in NDD settings, suggesting that at least one teacher in the NDD schools proposed *preacademic* activities for 75% of the time. While, on average, teachers in DD school proposed *art/crafts* for 10% of the time at least one teacher proposed it for 25% of the time and while *gross motor* was proposed for 5% of the time on average in NDD schools one teacher, at least, proposed it for 22% of the time.

Table 6.14A Management of Time percentages in each general teacher proposed category in DD and NDD schools – following redistribution of the *mixed activity* category.

	DD (N = 26) (164 hours)			NDD (N = 26) (151 hours)		
Category	Mean%	Median %	Range %	Mean %	Median %	Range %
Physical	7	0	0-21	10	3	0-29
Expressive	16	14	0-35	9	7	0-27
Storytelling/Language	7	5	0-19	9	6	0-26
Preacademic	27	28	2-52	37	37	13-75
Religion/Ethics	2	1	0-11	3	1	0-21
Media-related	2	0	0-13	1	0	0-8
Personal/Social	18	19	3-32	16	15	5-39
Domestic/Economic	5	4	0-22	4	3	0-12
Transitional	4	0	0-21	3	1	0-14
Waiting	2	2	0-12	1	1	0-8
Free activities	10	7	0-34	7	4	0-30
Mixed activities	0	0	0	0	0	0
Other/No Information	0	0	0	0	0	0

In reviewing the distribution of proposed activity in both settings it was noted that the *mixed activity* category was proposed 12% and 15% of the time in DD and NDD schools respectively. This represents quite a high level of frequency in this aggregate category and it was felt that it might mask the degree to which children had access to a variety of activities within the classroom. The data was, therefore, reanalysed to determine which categories were included in the *mixed activity* category. The percentages were redistributed across the revealed categories and sub-categories. Table 6.14A above shows the redistribution of *mixed activities* across other general categories. The redistribution in DD

schools yielded an increase in time allocated to the general category *physical* from 5% to 7%, *expressive* from 14% to 16%, *preacademic* from 23% to 27% and *personal/social* from 17% to 18%. In NDD schools the redistribution was similar with *physical* rising from 7% to 10%, *expressive* from 7% to 9%, *preacademic* from 32% to 37% and *personal/social* from 14% to 16%.

In DD Schools there was also an increase in the percentage of time proposed for *free activities* from 7% to 10%. The rise in NDD schools was from 6% to 7%. With the exception of the *free activity* category in DD schools the redistribution of the mixed activity category across the general categories reflected the already existing trend of proposed activities with the highest increase going to the *preacademic* category in both settings. The concern that aggregating activities within the *mixed activity* category might misrepresent what was actually happening in schools is not borne out by the analysis of the redistribution by category.

Table 6.15 presents details of the distribution of allocated time within the general categories (bold faced) and sub-categories before redistribution of the *mixed activity* category. Within the general *preacademic* category the main sub-categories proposed were *reading* (6% in DD schools and 8% in NDD schools) and *number* (7% in DD schools and 8% in NDD schools). There was a difference in the further distribution with NDD schools allocating 9% of time to *writing* compared to 4% in DD schools and 6% to *Irish language* compared to 3% in DD schools. Categories that were proposed very little or not proposed at all during the observation period include *dramatic activity* (0% in DD schools and 1% in NDD schools), *music* in NDD schools (1%), *physical science* (1% in both DD and NDD schools) and *social science* was not proposed at all. The *social* sub-category was proposed 1% of the time in both settings and the *discipline* and *economic* sub-categories were never proposed. The range of time teachers allocated to different sub-categories indicates some variability across the two school settings. Within the *preacademic* sub-categories the range for the *Irish language* sub-category was 0-12 in DD schools compared to 0-49 in the NDD schools. The range in the *arts/crafts* sub-category was 0-25 and 0-17 in DD and NDD schools respectively. In the *mixed activity* category the range varied from 0-28 in DD schools to 0-44 in NDD schools.

Table 6.15: Management of Time percentages (mean, median and range) in each teacher-proposed category in DD and NDD schools.

	DD (N = 26/164 hours)			NDD (N = 26/151 hours)		
Category	Mean %	Median %	% Range	Mean %	Median %	% Range
Physical	**5**	**0**	**0-19**	**7**	**5**	**0-22**
Gross-Motor	3	0	0-19	5	1	0-22
Fine-Motor	2	0	0-18	2	0	0-16
Expressive	**14**	**13**	**0-35**	**7**	**7**	**0-25**
Dramatic Play	0	0	0-1	1	0	0-8
Arts and Crafts	10	7	0-25	5	2	0-17
Music	4	4	0-17	1	0	0-14
Storytelling/Language	**7**	**5**	**0-17**	**8**	**6**	**0-26**
Preacademic	23	22	2-49	32	28	10-75
Reading	6	4	0-19	8	8	0-23
Irish Language	3	2	0-12	6	2	0-49
Writing	4	3	0-12	9	5	0-27
Numbers/Maths	7	6	0-21	8	6	0-34
Physical Science	1	0	0-9	1	0	0-4
Social Science	0	0	0-3	0	0	0-7
Other	2	0	0-11	0	0	0-3
Religion/Ethics	**2**	**1**	**0-11**	**3**	**1**	**0-21**
Media-related	**2**	**0**	**0-13**	**1**	**0**	**0-8**
Personal/social	**17**	**18**	**3-32**	**14**	**12**	**1-39**
Personal care	15	16	0-32	13	12	0-38
Social	1	0	0-7	1	0	0-4
Discipline	1	0	0-6	0	0	0-2
Domestic/Economic	**5**	**4**	**0-22**	**3**	**2**	**0-12**
Domestic	5	4	0-22	3	2	0-12
Economic	0	0	0-1	0	0	0
Transitional	**4**	**0**	**0-17**	**3**	**1**	**0-11**
Waiting	**2**	**1**	**0-11**	**1**	**0**	**0-8**
Free activities	**7**	**6**	**0-34**	**6**	**3**	**0-30**
Mixed activities	**12**	**10**	**0-28**	**15**	**12**	**0-44**
Other/no information	**0**	**0**	**0**	**0**	**0**	**0**

The situation regarding the sub-categories following the redistribution of the *mixed activities* category reflects the pattern in the general categories. Table 6.15A shows that in the DD schools as a result of the redistribution teachers proposed the *preacademic* category 27% of the time. The additional 4% was distributed evenly across the sub-categories *reading* (+1%), *Irish language* (+1%), *writing* (+1%) and *number* (+1). In NDD schools the increase was 5% in the *preacademic* category from 32% to 37%. This increase was distributed to two of the seven sub-categories, *reading* (+3%) and *writing* (+2%). In the *physical* sub-categories there was an increase in time allocated to both *gross motor* and *fine motor* sub-categories in DD schools (from 3% to 4% and 2% to 3% respectively) and in *fine motor* only within the NDD schools (from 2% to 5%). The 2% gain in the *expressive* category was distributed across the sub-categories of *art* and *music*.

Table 6.15A: Management of Time percentages (mean, median and range) in each teacher-proposed category in DD and NDD schools. – following redistribution of the *mixed activity* category

	DD (N = 26/164 hours)			NDD (N = 26/151 hours)		
Category	Mean %	Median %	% Range	Mean %	Median %	% Range
Physical	**7**	**0**	**0-21**	**10**	**3**	**0-29**
Gross-Motor	4	0	0-19	5	3	0-22
Fine-Motor	3	0	0-18	5	0	0-20
Expressive	**16**	**14**	**0-35**	**9**	**7**	**0-27**
Dramatic Play	0	0	0-4	1	0	0-8
Arts and Crafts	11	10	0-28	6	4	0-18
Music	5	4	0-17	2	0	0-14
Storytelling/Language	**7**	**5**	**0-19**	**9**	**6**	**0-26**
Preacademic	**27**	**28**	**2-52**	**37**	**37**	**13-75**
Reading	7	5	0-28	11	10	0-23
Irish Language	4	3	0-12	6	2	0-49
Writing	5	5	0-15	11	6	0-43
Numbers/Maths	8	6	0-21	8	7	0-34
Physical Science	1	0	0-9	1	0	0-4
Social Science	0	0	0-3	0	0	0-7
Other	2	0	0-11	0	0	0-3
Religion/Ethics	**2**	**1**	**0-11**	**3**	**1**	**0-21**
Media-related	**2**	**0**	**0-13**	**1**	**0**	**0-8**
Personal/social	**18**	**19**	**3-32**	**16**	**15**	**5-39**
Personal care	16	16	0-32	15	13	3-38
Social	1	0	0-7	1	0	0-4
Discipline	1	0	0-7	0	0	0-2
Domestic/Economic	**5**	**4**	**0-22**	**4**	**3**	**0-12**
Domestic	5	4	0-22	4	3	0-12
Economic	0	0	0	0	0	0
Transitional	**4**	**0**	**0-21**	**3**	**1**	**0-14**
Waiting	**2**	**2**	**0-12**	**1**	**1**	**0-8**
Free activities	**10**	**7**	**0-34**	**7**	**4**	**0-30**
Mixed activities	**0**	**0**	**0**	**0**	**0**	**0**
Other/no information	**0**	**0**	**0**	**0**	**0**	**0**

(ii) Group Structure:

The MOT schedule was designed to allow data collectors record the proposed group structure for different activities. There were four categories provided and they were:

Whole Group (WG) Where an activity was proposed for all children

Part Group (PG) Where an activity was proposed for at least 3 children

Joint Activity (JA) Where an activity was proposed for 1 adult and 1 child or for 2 children

Alone (A) Where an activity was proposed for 1 specific child

Table 6.16 shows the percentage of time that teachers in DD and NDD schools proposed each group structure. For these findings the data is drawn from 26 DD and 26 NDD

schools and is based on 167 hours of observation in DD schools and 156 hours of observation in NDD schools. Both settings show a high degree of similarity.
The majority of time teachers proposed whole group activity, 88% and 85% in DD and NDD schools respectively.

Table 6.16: Percentage of time teachers propose that children spend in various group structures in DD and NDD schools.

	DD (N = 26 settings) (167 hours)			NDD (N = 26 settings) (156 hours)		
Group structure	Mean %	Media %	% Range	Mean %	Median %	% Range
Whole-group	88	89	72-100	85	88	56-100
Part-group	12	11	0-28	15	12	0-44
Joint activity	0	0	0-0	0	0	0-0
Alone	0	0	0-0	0	0	0-0

In both settings, the range indicates that at least one teacher proposed whole group structure for 100% of the time. It also indicates that the minimum percentage for which teachers in DD schools proposed whole-group activity was 72% of observations and for teachers in NDD schools it was 56% of the observations. Neither of the group structures joint activity or alone were proposed by any teacher in either setting at any time during observation.

Table 6.17 presents the findings of group structure for each of the general categories of teacher proposed activities. In DD schools the part-group structure was proposed for 12% of the time under the *expressive, personal/social* and *mixed activities* categories[27]. In NDD schools part group structure was proposed 15% of the time, all in the *mixed activity* category. Details of the group structures proposed across the sub-categories can be found in Table 6.17A at Appendix 12.

[27] Note: Given that the analysis of the mixed activity category showed no major shift in the distribution of the categories it has been maintained as a category in the remainder of the tables.

Table 6.17: Group structure intended for each major type of teacher-proposed activity in DD and NDD schools

	DD (N = 26/164 hours)						NDD (N = 26/151 hours)					
Category	Total # of Hours	Mean % of Hours	% Whole group	% Part-group	% Joint Activity	% Alone	Total # of Hours	Mean % of Hours	% Whole group	% Part group	% Joint Activity	% Alone
Overall	**164**	**100**	**88**	**12**	**0**	**0**	**151**	**100**	**85**	**15**	**0**	**0**
Physical	9	5	100	0	0	0	9	6	100	0	0	0
Expressive	23	14	97	3	0	0	12	8	100	0	0	0
Storytelling/ Language	11	7	100	0	0	0	13	9	100	0	0	0
Preacademic	37	22	100	0	0	0	46	30	100	0	0	0
Religion/ Ethics	3	2	100	0	0	0	6	4	100	0	0	0
Media-related	3	2	100	0	0	0	2	1	—	—	—	—
Personal/ Social	30	18	98	2	0	0	21	14	100	0	0	0
Domestic/ Economic	7	4	100	0	0	0	4	3	100	0	0	0
Transitional	5	3	100	0	0	0	4	2	100	0	0	0
Waiting	3	2	100	0	0	0	2	1	—	—	—	—
Free Activities	14	9	100	0	0	0	10	7	100	0	0	0
Mixed Activities	19	12	3	97	0	0	22	15	0	100	0	0
Other/No information	0	0	NI	NI	NI	NI	0	0	NI	NI	NI	NI

Note. A dash indicates total number of entries too small for a meaningful group structure percentage. NI = No information.

(iii) Type of Involvement:

Each observation was categorised as to whether the teacher intended the children to listen/watch, or to participate/do. In fact the results suggest almost universal intention to have children participating and doing rather than listening and watching. In 100% of DD schools and 99% of NDD schools the participate/do category was recorded. This may reflect a poorly designed instrument unable to detect the distinction or poorly trained data collectors unable to distinguish the intentions of the teacher. It may also reflect the emphasis in the literature and in teacher training on including children as active participants in classroom activities. Under the circumstances it is difficult to interpret the results under this heading and a further, more carefully designed, study is required to establish the degree to which teachers actively involve children as participants in the activities they propose.

6.3.2 Child Activity Observation Findings:

The Child Activity (CA) observation schedule was designed to observe and record the activities and interactions of the selected children. The observations of child activity took

place in each setting. In general, 4 children were observed in each setting. Each child was selected at random, from the eligible sample, and observed over two ten-minute periods on each of two non-consecutive days.[28] Data collectors made an observation of the child every 30 seconds of the four ten-minute periods. This yielded 80 observations per child. Details of the CA categories are available at Appendix 7. A list with examples is presented below.

List of Child Activity Categories with examples:

Physical	
Gross Motor:	running, climbing
Fine Motor:	puzzles, building with small blocks
Expressive	
Dramatic Play:	role plays, moving like an animal
Arts and Crafts:	painting, cutting/gluing materials
Music:	singing, playing instruments
Storytelling/Language	
Listening:	to stories, rhymes
Preacademic*	
Reading:	reading letters, independent reading
Writing:	writing letters, practice with pencils
Numbers/maths:	counting, adding/subtracting
Physical Science:	planting seeds, weather lessons
Social Science:	visiting local fire-stations
Other:	calendar time, memory games
Religious	**Praying, attending services**
Media-related	**Watching film-strips or television**
Personal/Social	
Personal Care:	washing hands, eating snack
Social:	show and tell, sharing materials
Discipline:	sitting in Time Out, discussing misbehaviour
Expression of Emotion	
Positive:	hugging, laughing, smiling
Negative:	screaming, crying, fighting
Domestic/Economic	
Domestic:	set-up/clean-up of materials
Economic:	farming, selling produce
Transitional	**Lining up, moving between activities**
Accidents	**Dropping something, falling down**
No Active Engagement	**Looking around the room, Unoccupied in an activity,**

* An additional sub-category of Irish language was included in the IEA study in Ireland.

The observation scheduled provided data to answer a number of specific questions about the activities and the social context of the activities:

(i) In what types of activity were the children engaged?

Type of activity

[28] In advance of data collection all eligible children, within the age range and with parental permission, were assigned a random number. On arrival the four children were selected through the numbers assigned – this avoided teacher selection and/or self-selection.

(ii) During what percentage of observations were children talking?

Verbalisation

(iii) What type of groupings were children in during various activities?

Group structure

(iv) During what percentage of observations were children interacting with one or more adults? During what percentage of observations were children interacting with one or more children?

Interaction with adults and children

(v) Who initiated the various activities that children were engaged in during observation

Social origin of activity

(i) Type of activity;

The findings on type of activity observed are presented separately for a possible 102 children attending DD schools and 101 children attending NDD schools[29]. The total number of observations in the CA data set is 7,520 and 7,280 in DD and NDD settings respectively.

Table 6.18 presents the percentages of CA observations in each general category. These findings indicate that the pattern of activity in both settings was similar but the percentages varied.

Table 6.18 Percentage of Child Activity observed in each general category in DD and NDD schools

	DD (N = 94children) 7520 entries			NDD (N = 91 children) 7280 entries		
Category	Mean %	Median %	% Range	Mean %	Median %	% Range
Physical	9	6	0-41	10	3	0-48
Expressive	15	14	0-60	11	9	0-49
Storytelling/Language	4	0	0-34	8	3	0-54
Preacademic	25	22	0-76	28	25	0-73
Religion/Ethics	1	0	0-21	1	0	0-16
Media-Related	2	0	0-25	2	0	0-25
Personal/Social	20	18	1-56	17	16	0-58
Expression of Emotion	1	0	0-8	1	0	0-18
Domestic/Economic	2	0	0-24	1	0	0-8
Transitional	6	5	0-30	7	5	0-27
Accident	0	0	0-3	0	0	0-4
No Active Engagement	13	13	0-43	12	11	0-45
Other/No Information	2	1	0-9	2	0	0-16

[29] The finally analysed CA data set yielded usable information for 94 and 91 children in DD and NDD settings respectively.

Children in both settings were engaged in *preacademic* activities for 25% or more of the total observations across the two days (DD school = 25%, NDD schools = 28%). On average children in DD schools were engaged in *personal/social activities* 20% of the observation time, compared to 17% in NDD schools. The next most frequently observed activities in DD schools were *expressive*, at 15% and *no active engagement* at 13% of the observations. These were also the next two most common activities in NDD schools also although the order and percentage was different, with *no active engagement* at 12% and *expressive* at 11%. This moderately high percentage of observed *no active engagement* is somewhat unexpected given the MOT data, which indicates that it is the intention of teachers that children should be participating/doing for 98%-100% of the time.

Children were recorded as involved in physical activity in 9% of the observations in DD schools and 10% in NDD schools. The percentage of observations in the category storytelling/language was 4% in DD schools compared to 8% in NDD schools. Transitional activity was recorded at 6% and 7% respectively in DD and NDD schools. Not surprisingly the average percentage of observed *accidents* was 0% in both settings. The range given for this category in DD schools is 0%-3% and 0%-4% in NDD schools suggesting a low level of *accidents* observed.

Reviewing the ranges across the categories illustrates that in DD schools at least one child was engaged in *preacademic* activities during 76% of the observations while at least one other was never observed to be engaged in *preacademic* activities. The range for this category in NDD schools was 0%-73%. The range for the *no active involvement* category, observed at a moderately high level in both settings, is 0%-43% in DD schools and 0% - 45% in NDD schools. This indicates that at least one child was not engaged in any activity during 43% and 45% of the observations in DD and NDD schools respectively. One must be cautious in interpreting this finding as it could be that children recorded as *not actively engaged* were in fact reflecting or resting.

The distribution of activities across the sub-categories is presented in Table 6.19. Within the most common activity category of *preacademic* the distribution across sub-categories is similar across both settings. During the period of observation most children were engaged in *number* activity, 9% in DD and 8% in NDD schools, *reading* activity, 6% in

DD and 8% in NDD schools and *writing* activity, 5% and 7% in DD and NDD schools respectively. The observation in the *expressive* category were distributed across the three sub-categories with the highest percentage in *arts/crafts*, 9% and 7% in DD and NDD schools.

Children were engaged in dramatic play for 2% of the observations in both DD schools and NDD schools although the mean percentage for teachers proposing this activity in the MOT data was 0% and 1% in DD and NDD schools respectively. Within the *physical* activity category more observations were made of children engaged in fine motor than gross motor activity, 7% and 2% respectively in DD schools and 6% and 4% respectively in NDD schools.

Table 6.19: Percentage of observations in all child activity categories in DD and NDD schools.

	DD (N = 94 children) 7520 entries			NDD (N = 91 children) 7280 entries		
	Mean %	Median %	% Range	Mean %	Median %	% Range
Physical	**9**	**6**	**0-41**	**10**	**3**	**0-48**
Gross-Motor	2	0	0-28	4	0	0-35
Fine-Motor	7	0	0-39	6	0	0-48
Expressive	**15**	**14**	**0-60**	**11**	**9**	**0-49**
Dramatic Play	2	0	0-26	2	0	0-24
Arts and Crafts	9	6	0-56	7	3	0-48
Music	4	0	0-28	2	0	0-20
Storytelling/Language	**4**	**0**	**0-34**	**8**	**3**	**0-54**
Preacademic	**25**	**22**	**0-76**	**28**	**25**	**0-73**
Reading	6	1	0-46	8	3	0-41
Irish Language	3	0	0-29	4	0	0-43
Writing	5	0	0-30	7	0	0-39
Numbers/Maths	9	5	0-51	8	1	0-48
Physical Science	1	0	0-19	1	0	0-16
Social Science	0	0	0-11	0	0	0-24
Other	1	0	0-20	0	0	0-16
Religion/Ethics	**1**	**0**	**0-21**	**1**	**0**	**0-16**
Media-related	**2**	**0**	**0-25**	**2**	**0**	**0-25**
Personal/social	**20**	**18**	**1-56**	**17**	**16**	**0-58**
Personal care	4	1	0-21	7	4	0-33
Social	14	11	0-56	9	8	0-29
Discipline	2	0	0-20	1	0	0-10
Expression of Emotion	**1**	**0**	**0-8**	**1**	**0**	**0-18**
Positive	0	0	0-5	0	0	0-8
Negative	1	0	0-5	1	0	0-18
Domestic/Economic	**2**	**0**	**0-24**	**1**	**0**	**0-8**
Domestic	2	0	0-24	1	0	0-8
Economic	0	0	0	0	0	0
Transitional	**6**	**5**	**0-30**	**7**	**5**	**0-27**
Accidents	**0**	**0**	**0-3**	**0**	**0**	**0-4**
No Active Engagement	**13**	**13**	**0-43**	**12**	**11**	**0-45**
Other/no information	**2**	**1**	**0-9**	**2**	**0**	**0-16**

Note: The mean total percentage may not equal 100, due to rounding.

In both settings the sub-category with the highest recorded observations was the *social* element of the *personal/social* category, 14% in DD schools compared to 9% in NDD schools. Drama was among the lowest recorded sub-categories with children engaged in this activity on 2% of the observations in both DD and NDD schools. Activity in the category of *expressions of emotion* was rarely observed, with 1% observed in the sub-category *negative* expression in both DD and NDD schools.

The CA findings present a fairly similar picture for children in both settings. In general, children are engaged in similar types of activities for the largest percentages in DD and NDD schools, *preacademic* and *personal/social* activities. Moderately high percentages of observations were noted in the *expressive* (15% and 11%) and *no active engagement* (13% and 12%) category in both settings and moderate percentages in *physical* (9% and 10%) and *transitional* (8% and 7%) activity. In the main the CA findings are consistent with the MOT findings across both the general categories and the sub-categories.

(ii) Verbalisation:

Verbalising was recorded during an activity whether it was associated with the activity or not. For instance, a child might be recorded as talking while participating in a colouring activity where the conversation might have been about the activity or anything else. Table 6.20 illustrates that children were recorded as verbalising during 17% of the total observations in DD schools and 15% of the total in NDD schools.

Table 6.20 Percentage of observations in each general CA category during which child was verbalising in DD and NDD schools

	DD (N = 94 children) (7,520 entries)			NDD (N = 91 children) (7,280 entries)		
Category	Total # of Observations	Mean % of Observations	% Verbal	Total # of Observations	Mean % of Observations	% Verbal
Overall	7520	100	17	7,280	100	15
Physical	697	9	11	723	10	23
Expressive	1,073	14	15	788	11	15
Stories/language	286	4	20	552	8	11
Preacademic	1,870	25	14	1,985	27	15
Religion/Ethics	76	1	36	96	1	24
Media-related	177	2	5	119	2	13
Personal/Social	1,479	20	41	1,215	17	29
Expressing Emotion	53	1	17	86	1	12
Domestic/Economic	136	2	13	80	1	2
Transitional	453	6	2	464	6	2
Accidents	7	0	—	8	0	—
No Active Engagement	975	13	1	868	12	0
Other/No Info	238	3	NI	296	4	NI

Note: A dash indicates total number of entries too small for a meaningful percentage.

There was a difference in the distribution of the percentages of verbalising between the two settings. For instance, children were most frequently noted as verbalising during *personal/social*, 41%% in DD compared to 29% in NDD schools and *religious*, 36% and 24% in DD and NDD schools respectively.

The high percentage of verbalisation during religious activity may reflect the nature of interaction between the adult and the child where prayers are recited aloud and where the adult poses specific questions, requiring the child/children to reply. Children were observed verbalising to a moderately high degree during *storytelling* in DD schools, 29%, while a level of 11%was recorded in NDD schools. A moderate degree of verbalising was recorded during *expressive* activities, 15% in both DD and NDD schools and *expressions of emotion*, 17% and 12% in DD and NDD schools respectively. A review of the distribution across the sub-categories shows that children were most frequently recorded as verbalising during *social* activities, 54% in DD schools and 40% in NDD schools. In DD schools *music, Irish language* and *reading* showed verbalisation at a percentage level of 32%, 28% and 25% respectively. In NDD schools the pattern of high percentages within sub-categories was across *gross motor, music* and *Irish language* activities at 37%, 24% and 23% respectively. Further details of the distribution can be seen in Table 6.20A at Appendix 13.

(iii) Group Structure/Social Context:

Each child activity observation record was categorised as to whether the observed child was: alone with no adult present; with another child; with a child and an adult; in a small group of between two and six children; in a small group with an adult present or nearby; in a large group of seven or more children; in a large group with an adult present or nearby; with one or more adult(s); in a class group but not participating; physically/verbally responding in unison with all or most of the class group. The data suggests no great difference across schools in the pattern of group structure observed. Overall children in junior infant classes were observed in a large group with an adult present for 46% of the time. In DD schools the percentage was 42%, compared to 50% in NDD schools. In an analysis of the findings for the categories associated with different groupings, Table 6.21 below indicates that, in DD schools 53% of *media related* activity occurred in the large group with adult social context.

Table 6.21: Percentage of observations in each general child activities category by social context categories in DD schools

(N = 94 children) (7,520 entries													
Category	*Total # of Observations*	*Mean % of Observations*	*% Alone*	*% With Child*	*% With Child With Adult*	*% Small Group*	*% Small Group With Adult*	*% Large Group*	*%Large Group With Adult*	*% With Adult*	*% No Group Resp.*	*% Group Resp.*	*% Insufficient Information*
Overall	7,520	100	1	0	4	0	36	0	42	9	0	8	0
Physical	697	9	0	0	6	0	49	0	30	9	0	6	0
Expressive	1,073	14	0	0	4	0	39	0	41	6	0	10	0
Stories/Language	286	4	0	0	3	0	30	0	35	5	7	20	0
Preacademic	1,870	25	0	0	1	0	30	0	51	7	1	10	0
Religion/Ethics	76	1	0	0	0	0	24	0	17	0	0	59	0
Media-related	177	2	0	0	1	0	1	0	53	39	0	6	0
Personal/Social	1,479	20	2	0	8	0	44	0	36	7	0	3	0
Expressing Emotion	53	1	0	0	9	0	45	0	32	10	0	4	0
Domestic/ Economic	136	2	1	0	4	0	42	0	24	27	0	2	0
Transitional	453	6	1	0	2	0	23	0	50	21	0	3	0
Accidents	7	0	—	—	—	—	—	—	—	—	—	—	—
No Active Engagement	975	13	0	0	3	0	36	0	48	12	0	1	0
Other/No Information	238	3	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

Note. A dash indicates total number of entries too small for a meaningful social context percentage. NI = No information.

Fifty-one percent of *preacademic*, 50% of *transitional* and 48% of *no active engagement* activity observations were recorded within this social context also. Forty-nine percent of *physical* activity occurred in small group with adult and 59% of *religion/ethics* activity occurred in the group response social context.

Table 6.22: Percentage of observations in each general child activities category by social context categories in NDD schools

(N = 91 children) (7,280 entries)													
Category	*Total # of Observations*	*Mean % of Observations*	*% Alone*	*% With Child*	*% With Child With Adult*	*% Small Group*	*% Small Group With Adult*	*% Large Group*	*% Large Group With Adult*	*% With Adult*	*% No Group Resp.*	*% Group Resp.*	*% Insufficient Information*
Overall	7,280	100	1	0	3	0	32	0	50	6	0	8	0
Physical	723	10	0	0	4	0	26	0	53	5	0	12	0
Expressive	788	11	0	0	4	0	55	0	23	4	0	13	1
Stories/Language	552	8	0	0	0	0	26	0	59	1	0	14	0
Preacademic	1,985	27	0	0	2	0	25	0	57	5	0	11	0
Religion/Ethics	96	1	0	0	0	0	15	0	43	3	0	39	0
Media-related	119	2	0	0	0	0	14	0	81	1	0	4	0
Personal/Social	1,215	17	3	0	7	0	37	0	45	6	0	2	0
Expressing Emotion	86	1	0	0	8	0	40	0	47	4	0	1	0
Domestic/Economic	80	1	1	0	5	0	36	0	48	9	0	1	0
Transitional	464	6	1	0	3	0	29	0	46	19	0	2	0
Accidents	8	0	—	—	—	—	—	—	—	—	—	—	—
No Active Engagement	868	12	0	0	2	0	33	0	53	11	0	1	0
Other/No Information	296	4	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

Note. A dash indicates total number of entries too small for a meaningful social context percentage. NI = No information.

In NDD schools, Table 6.22 above, 81% of media related activity occurred in the large group with adult social context with 57% of *preacademic* and 53% of both *physical* and *no active engagement* activity observations also recorded within this social context. Fifty-five percent of the *expressive* activity occurred in small group with adult while 39% of *religion/ethics* activity occurred in the group response social context.

(iv) Interactions with adults and children:

Findings on the interactions of children during observation indicate a low level of interactions in junior infant classes. Table 6.23 indicates that in DD schools, for 88% of the observations, children were not interacting with an adult and for 79% of the observations they were not interacting with other children. The figures are 87% and 82% respectively for NDD schools. While children were almost always observed in a room with at least one adult present they were rarely recorded as interacting with that adult. Also, while children were mostly observed in the company of children they were often not interacting with them.

Table 6.23: Percentage of observations in child activities social by context interaction categories in DD and NDD schools

# of Adult/child Interactions	DD (N = 94 children) (7,520 entries)	NDD (N = 91 children) (7,280 entries)
Number of adults		
0	88	87
1	4	5
2 or more	0	0
Group Response	**8**	**8**
Number of children		
0	79	82
1	11	8
2-4	2	2
5-8	0	0
Group Response	**8**	**8**

Note: The percentage of social context interactions in a setting may total less than 100, due to rounding or missing data.

An analysis of interactions found that 50% of the classrooms in which observations took place recorded 10% or less child-child interaction. Twenty-nine percent had between 0%-5% and 21% had between 6%-10% while 6% of classrooms had between 26%-30% child-child interactions, the highest level recorded in schools. The range found was 2-30% in DD schools and 2-23% in NDD schools. To ascertain the reliability of these figures an analysis was carried out on the percentage of classrooms having similar percentages ($\leq$ 10% difference) of child-child interactions on the two different observation days. For DD

schools the percentage rooms with similar levels was 88%, for NDD classrooms it was 84%. This suggests that the relatively low percentage of child-child interactions found across school classrooms is an accurate reflection of the interaction level.

(v) Social origin of activities:

For each individual child activity the social origin of the activity was recorded. There were four types of social origin listed: adult-directed, where the observed child's activity was determined by the adult; adult-suggested, where the adult either suggested ideas for an activity or helped extend the child's own ideas; child-suggested, where the observed child's activity was suggested by another child and child-initiated, where the observed activity was the child's own choice. In the analysis the adult-directed and adult-suggested social origins were combined. Table 6.24 below indicates that there is little difference in the recorded social origin of observed activity.

Table 6.24: Percentage of observations in each general child activities category by social origin categories in DD and NDD schools in Ireland

	DD (N = 94 children) (7,520 entries)					*NDD (N = 91 children) (7,280 entries*				
Category	*Total # of Observations*	*Mean % of Observations*	*% Adult Initiated*	*% Child Suggested*	*% Child Initiated*	*Total # of Observations*	*Mean % of Observations*	*% Adult Initiated*	*% Child Suggested*	*% Child Initiated*
Overall	7,520	100	44	1	54	7,280	100	40	1	58
Physical	696	9	33	1	66	723	10	43	1	56
Expressive	1,071	14	46	1	53	787	11	37	1	62
Stories/Language	286	4	52	0	48	552	8	42	1	57
Preacademic	1,870	25	45	2	53	1,984	27	44	1	55
Religion/Ethics	76	1	50	7	43	96	1	31	2	67
Media-related	177	2	67	1	32	119	2	39	2	59
Personal/Social	1,479	20	41	2	57	1,215	17	40	1	59
Expression of Emotion	53	1	32	2	66	86	1	30	1	69
Domestic/Economic	136	2	41	2	56	80	1	42	1	57
Transitional	453	6	45	1	54	464	6	38	1	61
Accidents	7	0	–	–	–	8	0	–	–	–
No Active Engagement	972	13	47	1	52	868	12	38	1	61
Other/No Information	244	3	NI	NI	NI	298	4	NI	NI	NI

Note. A dash indicates total number of entries too small for meaningful social origin percentage. Total percentage across the columns may equal less than 100, due to rounding. NI = No information.

In DD schools 54% of the observed activities were child-initiated and 44% were adult-initiated compared to 58% and 40% respectively in NDD schools. *Media-related* (67%), *storytelling* (52%) and *religious/ethics* (50%) were the three most common adult-initiated activities in DD schools and *physical* (66%), *expressions of emotion* (66%) and *personal/social* (57%) the most common child-initiated activities. Unlike in the DD

schools in NDD schools all the observed activity categories were more often child-initiated than adult-initiated with *expressions of emotion* (69%), *religious/ethics* (67%) and *expressive* (62%) the highest. Of those activities that were recorded as adult-initiated the most common were *preacademic* (44%), *physical* (43%) and *storytelling and domestic/economic* (42%).

Given the high percentage of whole group activities proposed by teachers and the fact that many children were observed in large group activities it may seem unexpected that such a high proportion of activities observed were recorded as being child-initiated. This may reflect the common teaching strategy where a teacher specifies a number of possible options within a particular activity, such as maths, from which the child would then choose. Thus, while the child activity is recorded as child-initiated it is occurring within the context of an adult-proposed major activity.

6.3.3 Adult Behaviour Observation Findings:

The adult behaviour (AB) observation system was designed to record the behaviour of the adult in the settings and the nature of the adult's involvement with the children. The AB information for the adult was collected by making an observation every 30 seconds of the ten-minute observation periods. The adult was observed for two ten-minute periods each morning of the two non-consecutive days. In total 80 observations were made per adult. Details of the AB categories are available at Appendix 8.

The AB observation system provides information to answer two particular questions:

(i) What types of physical behaviour or verbal statements does the adult use?
Type of behaviour

(ii) What forms of involvement does the adult have with the children?
Degree of involvement

(i) Type of behaviour:

A complete AB data set included a total of 80 observations over the 2-day period for a total of 52[30] adults, 26 in both DD and NDD schools. The total number of observations is 2,080 in each setting. Detail of the AB categories, with examples, is given below.

[30] This figure is less than the total number of settings due to incomplete or insufficient data.

Adult Behaviour category system with examples

Type of Behaviour	Explanation/Example
Informational/facilitative teaching strategies	
Giving/receiving information/knowledge (content)	Tells/listens to child about facts, concepts, cause-effect relations, e.g.,"Apples grow on a tree."
Giving/receiving information/knowledge (non-content)	Tells/listens to child about information not related to teaching, e.g., "Your dad will come to get you today."
Giving demonstrations	Shows/listens to child about how to do a task, e.g., shows how to tie a shoe.
Eliciting information/knowledge (concepts)	Asks/listens to child about facts, concepts, cause-effect relations, e.g., "What day of the week is today?"
Eliciting information/knowledge (thoughts)	Asks/listens to child about own thoughts, e.g., "What games do you like to play?"
Eliciting an action or behaviour	Tells child to do a task to demonstrate acquisition or improvement of skills, e.g., "How do you use this toy?"
Offering choices	Tells/listens to questions about alternative activities available, e.g., "You may play with blocks or paint."
Encouraging activity	Encourages child to continue working or try again, e.g., "You're almost done, find three more red blocks."
Providing assistance/clarification/suggesting solutions	Helps child with an activity or clarifies a task, e.g., holds paper for a child while he/she cuts or pastes.
Providing feedback (positive)	Makes/listens to comments indicating praise or approval of a task, e.g., "I think this is a nice picture."
Providing feedback (negative)	Makes comment indicating criticism or disapproval of a task e.g.," You didn't do a very neat job."
Participation/shared activities	Full participant in child's activity, e.g., singing and doing the movements with a group of children.
Nurturance/expressions of affect	
Engaging in affectionate/friendly behaviour	Engages in/listens to child's requests for warm-hearted interactions, e.g., telling jokes and laughing.
Giving reassurance and support	Engages in/listens to child's requests for reassurance when ill or injured, e.g., cuddling a crying child.
Engaging in neutral behaviour	Parallel activity to child neither positive or negative, e.g. sitting on the couch reading different books.
Engaging in negative affective expression/behaviour	Says/does something of a degrading or demeaning nature, e.g., yells and calls child names.
Child-management	
Establishing/reminding child of rules	Explains/listens to questions about standards of behaviour, e.g., "Don't run on the stairs, you'll get hurt."
Verbal/physical intervention	Stops or restrains an undesirable behaviour, e.g. "Stop throwing the blocks!"
Giving an order	Insists child carry out a task/listens to answers about a task, e.g., "Bring your dishes here now! Jamie, come here!"
Giving permission	Permits the child to do what he/she wants to do, e.g., " Yes, we can take the bikes out today."
Refusing permission	Does not permit the child to do what he/she wants to do, e.g., "No, you may not go outside to play in the rain."
Listening to child's requests for permission	Listens to child ask for permission to do something
Problem-solving/conflict resolution	Assists with problems/listens to solutions to conflicts between children or children and adults, e.g., "We could take turns playing with the truck."
Providing feedback (positive)	Makes comments/listens to requests for feedback indicating praise or approval of behavior, e.g., "You did a good job sitting quietly for story time."
Providing feedback (negative)	Makes comments indicating criticism or disapproval of behaviour, e.g., "You just broke a toy can't you be more careful?"
Calls for attention	Directs the child's attention to what teacher is saying or doing, e.g., quickly turning the lights on and off to get children to look at the teacher.
Supervision	Watching activities in a supervisory manner, e.g., looking around the room to make sure children are playing safely.
Transitional activities	Moves purposefully toward an activity, object, person or place, e.g., moving from the block area to another area where children are playing.

Table 6.25 shows the percentages of observations in the general AB categories for both settings. The largest percentages of observations were in the general category *teaching* on both DD schools (35%) and NDD schools (37%). *Routine activities* (19%) and *child*

management (17%) were next most frequent in DD schools compared to *participation/shared activities* (25%) and *routine activities* (16%) in NDD schools.

Table 6.25: Percentage of Adult Behaviour observed in each general category in DD and NDD schools

	DD (N = 26 adults) 2080 entries			NDD (N = 26 adults) 2080		
Category	Mean %	Median %	% Range	Mean %	Median %	% Range
Teaching	35	36	0-70	37	33	0-86
Participation/Shared activities	15	9	0-70	25	16	0-99
Nurturance/Expression of Affection	3	1	0-14	2	1	0-8
Child Management	17	16	4-33	11	10	0-45
Supervision	7	6	0-26	6	4	0-18
Transitional Activities	2	1	0-20	2	1	0-11
Routine Activities	19	17	4-45	16	15	0-38
Personal Activities	2	0	0-16	1	0	0-10

*Total mean p ercentage in a setting may equal less than 100 due to rounding

In terms of teaching strategy the greatest difference between the school settings was the level of *participation/shared activity* recorded, 15% in DD schools and 25% in NDD schools. In both settings the lowest percentages of observation were in the general categories *nurturance/expression of affection* (3% in DD and 2% in NDD schools), *transitional activities* (2% in both settings) and *personal activities* (2% in DD and 1% in NDD schools). An analysis of the ranges of percentage indicates that in certain DD schools up to 70% of the observations were of *teaching* behaviour and *participation/shared activities* while in at least one NDD school 99% of observations were in the *participation/ shared activities* category and in at least one other 88% were in the *teaching* category.

A more detailed analysis of the sub-categories, see Table 6.26 below, indicates that within the *teaching* categories there is a similarity in the pattern across both types of schools. In DD schools 10% of the observations were in the *eliciting information/knowledge (concepts)* and 6% in both *giving/receiving information/knowledge (content)* and *giving demonstrations*: in NDD schools the figures are 7%, 10% and 4% respectively.

The least frequently observed sub-category under the general *teaching* category was *giving choice*s which was not observed in either setting and *encouraging activity* which was not observed in DD schools and observed at the level of 2% in NDD schools. This suggests that teaching behaviour in both school settings is adult-centred rather than child-centred. The findings show a predominance of *giving/receiving information and knowledge* or *eliciting information/knowledge,* rather than *offering choices, encouraging an activity* or *providing assistance/clarification.* Within the *teaching* category a special analysis was carried out to assess the relative use of 2 types of teaching behaviour – adult-centred and

child-centred. In adult-centred teaching the teacher provides the information the she wants the child to learn such as, *giving/receiving information or knowledge* or *eliciting information or knowledge.*

Table 6.26: Percentage of Adult Behaviour observed in each category in DD and NDD schools

	DD (N = 26 adults) 2080 entries			NDD (N = 26 adults) 2080		
Category	Mean %	Median %	% Range	Mean%	Median %	% Range
Teaching	**35**	**36**	**0-70**	**37**	**33**	**0-86**
Giving/Receiving Information/Knowledge (Content)	6	5	0-19	10	4	0-48
Giving/Receiving Information/Knowledge (Non-Content)	1	0	0-5	1	0	0-3
Giving Demonstrations	6	6	0-16	4	3	0-15
Eliciting Information/Knowledge (Concepts)	10	9	0-24	7	3	0-28
Eliciting Information/Knowledge (Thoughts)	2	1	0-8	3	0	0-21
Eliciting Action/Behaviour)	5	4	0-18	5	5	0-15
Offering Choices	0	0	0-1	0	0	0-6
Encouraging Activity	0	0	0-3	2	0	0-13
Assisting/Clarifying/Suggesting Solutions	1	1	0-5	3	1	0-15
Providing Feedback (Positive)	3	1	0-14	2	1	0-9
Providing Feedback (Negative)	1	0	0-8	0	0	0-3
Participation/Shared Activities	**15**	**9**	**0-70**	**25**	**16**	**0-99**
Nurturance/Expression of affection	**3**	**1**	**0-14**	**2**	**1**	**0-8**
Engaging in Affectionate/Friendly Behaviour	1	0	0-6	1	0	0-4
Giving Reassurance/Support	1	0	0-8	1	0	0-3
Engaging in Neutral Behaviour	1	0	0-11	0	0	0-8
Engaging in Negative Affective Behaviour	0	0	0-3	0	0	0-1
Child Management	**17**	**16**	**Apr-33**	**11**	**10**	**0-45**
Establishing/Reminding Child of Rules	3	3	0-9	2	1	0-13
Verbal/Physical Intervention	2	1	0-10	2	0	0-8
Giving an Order	9	9	0-24	6	4	0-27
Giving Permission	0	0	0-4	0	0	0-1
Refusing Permission	0	0	0-1	0	0	0-1
Listening to Child's Requests for Permission	0	0	0-3	0	0	0-3
Problem-Solving/Conflict Resolution	0	0	0-1	0	0	0-3
Providing Feedback (Positive)	1	0	0-8	0	0	0
Providing Feedback (Negative)	0	0	0-4	0	0	0-3
Calls for Attention	2	1	0-11	1	0	0-5
Supervision	**7**	**6**	**0-26**	**6**	**4**	**0-18**
Transitional Activities	**2**	**1**	**0-20**	**2**	**1**	**0-11**
Routine Activities	**19**	**17**	**Apr-45**	**16**	**15**	**0-38**
Program Planning and Operation	8	6	0-35	6	7	0-20
Distributing and/or Rearranging Materials	6	4	0-25	5	4	0-23
Child-Related Personal Care	4	2	0-23	4	0	0-30
Maintenance of the Setting	1	0	0-5	1	0	0-11
Personal Activities	**2**	**0**	**0-16**	**1**	**0**	**0-10**

Child-centred teaching includes behaviours that actively involved the children in guiding the learning process such as, *offering choices, encouraging activity* or *providing assistance, clarification and/or suggesting solutions*. Results of analysis for schools show that the mean percentage of adult-centred behaviour observed in DD and NDD schools was 87% and 76% respectively.

Within the *routine activities* category (19% in DD and 16% in NDD schools) the most common sub-category recorded was *programme planning and operation* at 8% and 6%

respectively. Seventeen percent of the observed behaviours in DD schools and 11% in NDD schools were in the *child management* activities. A review of the sub-categories indicates that the largest percentage of sub-category observations was in *giving an order* at 9% DD schools 6% in NDD schools. Child management behaviours were recorded as being positive, neutral or negative (See Appendix 14). Analysis at this level was conducted in those settings in which the adult was observed to use a minimum of 4 child management behaviours. Of the total school sample 96% of the 26 DD schools and 85% of the 26 NDD schools fell within this parameter. Findings indicates that 73% and 72% of child management types were negative in DD and NDD schools respectively with 22% neutral and 5% positive in DD schools and 25% neutral and 3% positive in NDD schools.

A special analysis of adult listening behaviour was carried out for all settings. It shows that adult listening behaviour occurred in both *teaching* (3%) and *nurturance* (1%) in DD schools and in *teaching* (3%) alone in NDD schools. No listening behaviour was recorded for the adult under the heading of child management.

Within the AB category of *teaching* itself listening behaviour was observed 8% of the time in DD schools and 9% of the time in NDD schools. Listening was of two types, (i) an answer given by a child to a factual question or (ii) a child-initiated verbalisation such as an opinion or a request. In DD schools 63% of listening during teaching was to an answer to factual questions whereas in NDD schools 76% was to child-initiated verbalisation.

(ii) Degrees of involvement with children:

For each adult behaviour observation, the degree of involvement that the adult had with children was recorded. There were five options: non-participation, where the adult was involved in a separate activity from the children; supervision, where the adult was present in the room watching the children but not necessarily interacting with them; specific and short intervention, where the adult moved in and out of children's activities, offering some supports to them; direction, where the adult addressed the group of children for an extended period, for instance giving instructions; and participation, where the adult participated directly in the children's activities.

Table 6.27 presents the findings for the degree of involvement of the adult with children. More time was spent in short and specific involvement (36%) in DD schools than any

other - that is, the adult was observed to move in and out of children's activities, supporting, clarifying and correcting.

Table 6.27: Degree of involvement of adult with children in DD and NDD schools

	DD (N = 26 adults) (2080 entries)			NDD (N = 26 adults) (2080 entries)		
Category	Mean %	Media %	% Range	Mean %	Median %	% Range
Non-Participation	9	5	0-29	4	2	0-16
Supervision	14	11	0-45	13	11	0-28
Short & Specific Intervention	36	36	11-69	23	21	0-54
Direction	20	16	0-74	28	33	0-74
Participation	21	17	0-80	32	26	0-100

Note: The total mean percentage in a setting may be less than 100, due to rounding

More time was recorded in participation (32%) in the NDD school AB observations with direction (28%) and specific and short intervention (23%) the next most common behaviours. The ranges varied with the widest range in both DD and NDD schools in the participation option, 0-80 and 0-100 respectively.

The relationship between observed adult behaviour categories and degree of involvement was also investigated. Table 6.28 presents the findings. Overall, for adult behaviour observed in DD schools 36% involved specific and short interventions and in NDD schools 32% involved participation. For DD schools 44% of *teaching* behaviour category involved direction of children with 35% involving specific and short interventions. Sixty-seven percent of the *supervision* adult behaviour category, 30% of the *routine activities* and 22% of the *nurturance/expressions of affection* category involved the adult being present, watching the children while not directly relating to them. Sixty-one percent of the *nurturance/expression of affection* category involved specific and short interventions by the adult. Ninety-six percent of the adult's *personal activities*, 38% of *transitional activities* and 26% of *routine activities* involved no participation with the children. In the NDD schools 28% of adult behaviour categories observed involved direction compared to 20% in DD schools. Fifty-five percent of the *teaching* behaviour category involved direction of children, with 21% involving short and specific interventions. Seventy-two percent of the *supervision* behaviour category, 38% of the *transitional* category and 37% of the *routine activities* involved the adult being present and watching children while not directly involved with them.

Table 6.28: Observed adult behaviour and degree of involvement in DD and NDD schools

Category	*Disadvantaged National Schools (N = 26 adults) (2,080 entries)*							*Disadvantaged National Schools (N = 26 adults) (2,080 entries)*						
	Degree-of-involvement							*Degree-of-involvement*						
	Total # of Observations	*Mean % of Observations*	*% Non-Participation*	*% Supervision*	*% Specific and short Intervention*	*% Direction*	*% Participation*	*Total # of Observations*	*Mean % of Observations*	*% Non-Participation*	*% Supervision*	*% Specific and short Intervention*	*% Direction*	*% Participation*
Overall	2,080	100	9	14	36	20	21	2,080	100	4	13	23	28	32
Teaching	710	34	0	1	35	44	20	750	36	0	2	21	55	21
Participation/shared activities	312	15	0	1	15	11	73	508	25	0	1	7	8	84
Nurturance/expressions of affect	59	3	5	22	61	0	12	27	1	0	4	44	19	33
Child management	352	17	1	10	74	8	7	238	11	0	3	57	24	15
Supervision	152	7	2	67	16	3	12	116	6	3	72	10	12	3
Transitional activities	52	3	38	21	29	6	6	47	2	23	38	28	9	2
Routine activities	389	19	26	30	32	4	7	318	15	12	37	33	8	10
Personal activities	47	2	96	2	0	0	2	24	1	71	21	8	0	0
Other/no information	7	0	NI	NI	NI	NI	NI	52	3	NI	NI	NI	NI	NI

Seventy-one percent of the adult's *personal activities* and 23% of *transitional activities* involved non-participation with children. In general this analysis suggests that teachers in NDD schools are more directive in their teaching style than those in DD schools, where teaching is balanced between direction and short and specific interventions.

6.4 Correspondence Between Different Observational Data:

The combined observation system was designed to allow observers use the 3 instruments - the Management of Time (MOT) schedule, the Child Activity (CA) schedule and the Adult Behaviour (AB) schedule - simultaneously on each of the two non-consecutive observation days. The MOT schedule was completed continuously over the entire observation period and the CA and AB schedules were completed during selected 10-minute observation periods. In addition to facilitating the simultaneous collection of MOT, CA and AB data the combined observation system allows analysis of the correspondence between observed child activity and management of time and between observed adult behaviour and management of time. Examples of the observation forms are presented in Appendix 9.

6.4.1 Correspondence between MOT and CA:

For each child observed in a classroom the observer used the MOT and CA systems concurrently for 20 minutes to record the activities proposed by the adult and the child's activities. This allows for examination of the relationship between adult-proposed activities and child activities for a minimum of 40 minutes across two days (where there is only one child observed in a setting) and a maximum of 160 minutes (where there are four children observed in a setting).

To examine the relationship between MOT findings and CA findings a matrix was developed with the MOT categories on one dimension and the CA categories on the other dimension. The matrices included the general categories only. In completing the MOT/CA matrix it was found that there were between 10% and 15% missing entries. Missing entries could be the result of either the absence of the type of activity in either the MOT or the CA record or it could be the result of a CA being recorded where there was no corresponding MOT. Because of the high level of recorded Mixed Activities (MA) and Free Activities (FA) in the sample it was considered likely that this was the case. This led to the derivation of a MOT/CA matrix where the MA and FA entries were redistributed across the other general categories, giving a more accurate picture of the level of match between what the adult proposed and the activity of the child.

Figures 6.1 and 6.1A present the final matrices for MOT/CA in DD schools. The figure below presents detail of the level of match between the observed child activities and the adult-proposed activities. The diagonal line illustrates the points at which there is a direct match. The findings above do not, however, give any detail on the level of match. This detail is presented in Figure 6.1A below. Analysis of the actual number of observations in each cell indicates that the highest level of match was at *writing* and *number/maths* where a match between the adult-proposed activity and the observed child activity was found in 50% or more of the observations. There was a 30 - 49% level of match for eight of the cells with a relatively low level of observations in the *no active engagement* and *social* cells (10 - 19%)

Figure 6.1: MOT/CA matrix for DD schools (mixed and free activities redistributed

Management of Time Categories

Child Activity Categories	GMOT	FMOT	DP	A&C	MUS	S/L	IRISH LANG	RDG	WRTG	N/M	PHYS	SOCS	OTH	RLG	MED	PERS	SOC	DISC	DOM	ECO	TRNS	WAIT
GMOT	X																					
FMOT		X																				
DP																						
A&C				X															X			
MUS					X																	
S/L						X																
IRISH LANG							X															
RDG								X														
WRTG									X													
N/M										X												
HYS																						
SOCS																						
OTH													X									
RLG														X								
MED																						
PERS																X						
SOC	X			X		X	X		X	X				X		X			X			
DISC																						
DOM																			X			
ECO																						
TRNS	X																		X		X	
NOAE					X	X	X	X	X	X				X					X		X	

Where the adult proposed an activity and the child is observed in a different category this is most likely to be in the CA social or no active engagement category. Thus for the MOT *gross motor* category there is a match between what the adult proposes and the child activity observed in 30%-49% of observations. However, for 10%-19% of the adult proposed *gross motor* activity observations children were observed in either the CA *social* or *transition* category. For *religion* and *personal* the level of match was between 20% and 29%. Under the proposed activity of *religion/ethics* 20%-29% the same percentage range children (20 – 29%) were recorded as in *no active engagement* while a further 10%-19% of child observation recorded children in the *social* category. Under the proposed category of *personal* 20-29% of observations recorded were in the *social* category as well as in the *personal* category.

Figure 6.1A MOT/CA matrix for DD schools – percentage observations

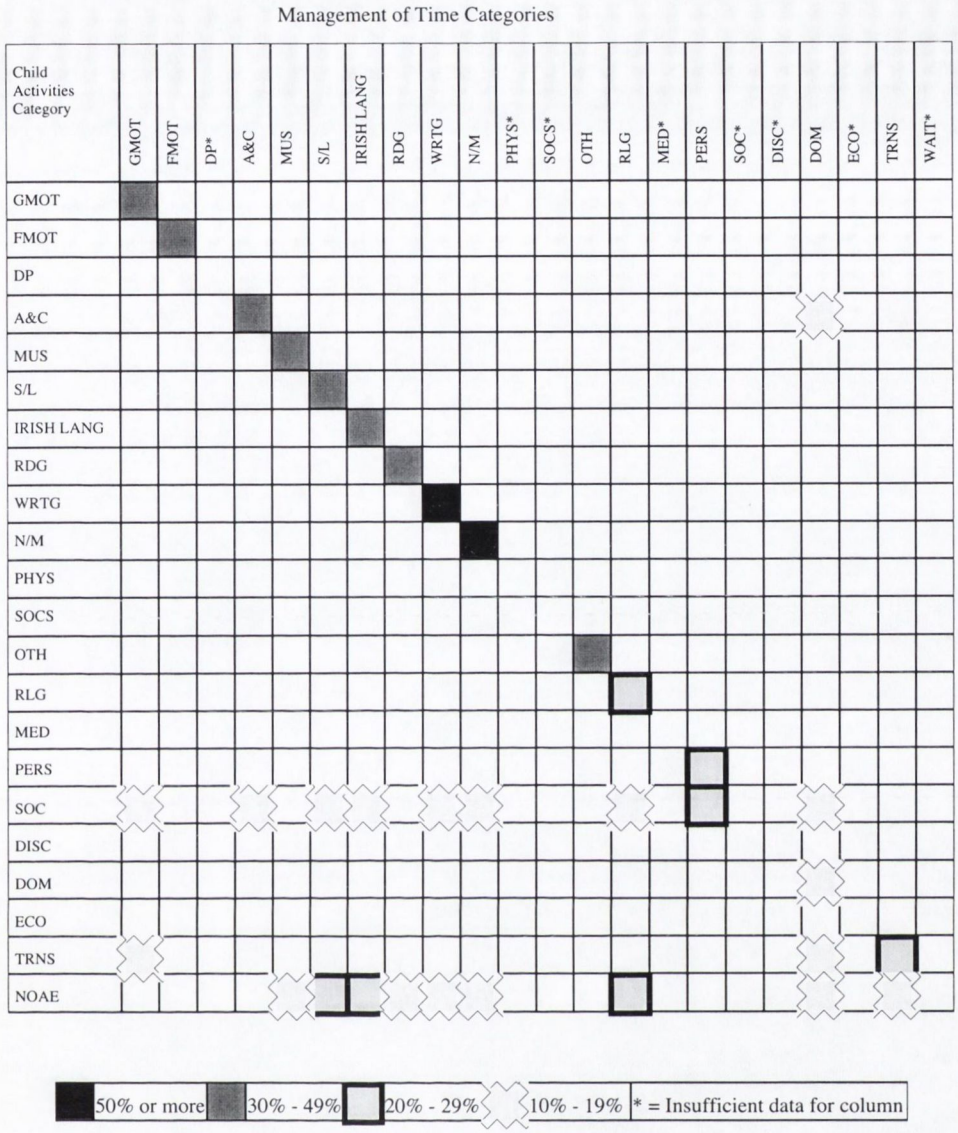


Figure 6.2 presents the matrix findings for MOT/CA for NDD schools. In this matrix the mixed and free activity observations have been redistributed across the main categories to capture a truer sense of the degree of match between adult-proposed activities and observed child activities. The pattern of matching is somewhat different in NDD schools compared to DD schools with 12 cells showing a measurable match in NDD compared to 14 cells in DD schools. Where children in NDD schools are observed in activities which are not those proposed by the adult the majority of those observations occur in the *no active engagement* category with a small scattering in the *social* and *transient* categories. In DD schools there was a measurable match at the *fine motor, music* and *other* categories which is absent in the NDD school matrix. However, in NDD schools there is a match recorded at *media related* category and this is not recorded in DD schools.

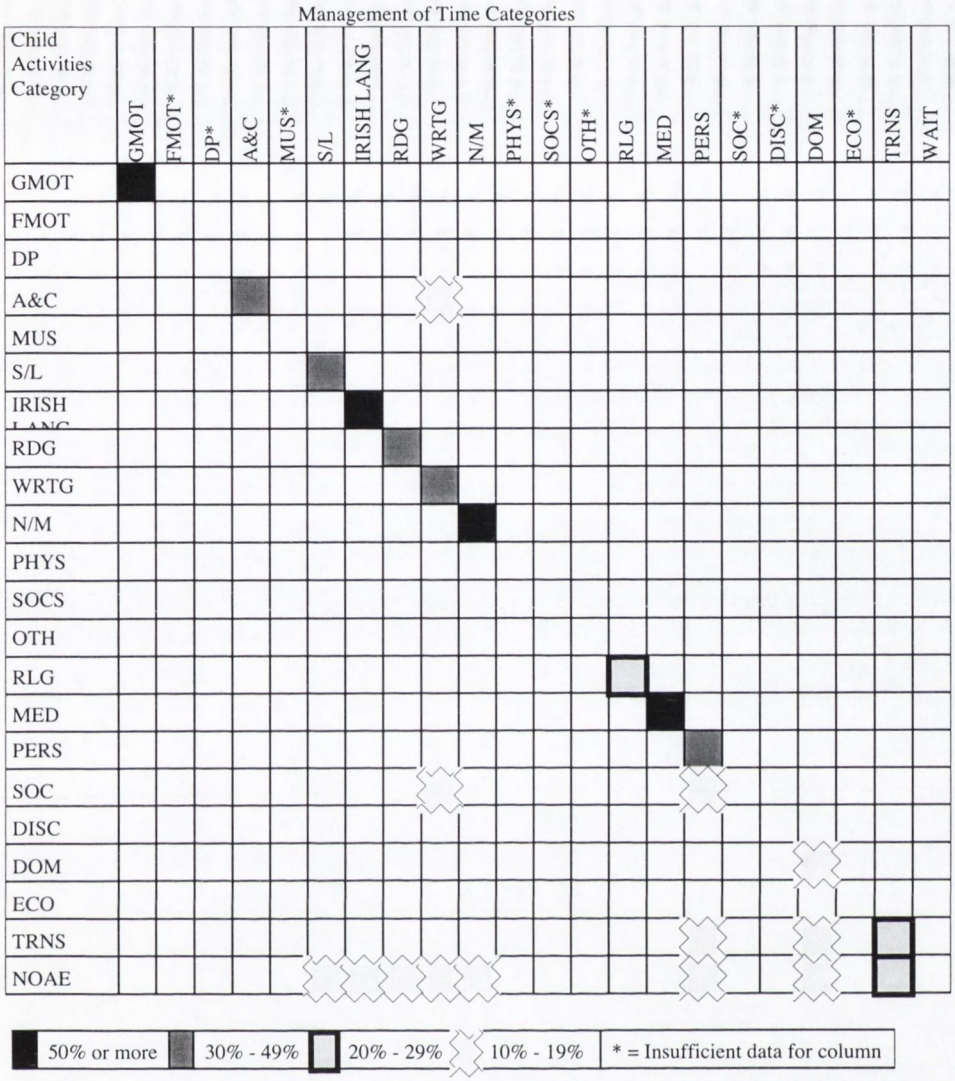
Figure 6.2: MOT/CA matrix for NDD schools (Mixed and Free activities redistributed)

Management of Time Categories

Child Activities Category	GMOT	FMOT	DP	A&C	MUS	S/L	IRISH LANG	RDG	WRTG	N/M	PHYS	SOCS	OTH	RLG	MED	PERS	SOC	DISC	DOM	ECO	TRNS	WAIT
GMOT	X																					
FMOT																						
DP																						
A&C				X					X													
MUS																						
S/L						X																
IRISH LANG							X															
RDG								X														
WRTG									X													
N/M										X												
HYS																						
SOCS																						
OTH																						
RLG														X								
MED															X							
PERS																X						
SOC									X							X						
DISC																						
DOM																			X			
ECO																						
TRNS																X			X		X	
NOAE						X	X	X	X	X						X			X		X	

Figure 6.2A below gives details of the percentage of observations in each cell. In NDD schools 4 of the 12 cells showing a match between adult-proposed activities and observed child activities show percentage observations above 50% compared to 2 of the 14 cells in the DD schools. These were in the *gross motor, Irish language, number/math* and *media related* categories. While there were a number of observations in the *no active engagement* category in the NDD schools only one of the cells recorded a percentage of observations above 19% where the adult had proposed *transient* activities. In the DD schools there were 3 cells above 19% at the *no active engagement* category where the adult had proposed *storytelling, Irish language* and *religion* activities. In NDD schools at the proposed category of *writing* the CA category of *arts and crafts* was observed at a level of 10%-19%. From these findings it appears that there is less off-task activity in NDD schools and the off-task activity observed is less varied and at a lower percentage than that recorded in the DD schools.

Figure 6.2A:MOT/CA matrix for NDD schools – percentage observations



6.4.2 Correspondence between MOT and AB:

The combined observation system allowed the observer to use the MOT and the AB systems concurrently for 20 minutes of each of the data collection day. This yielded information to allow the relationship between the adult-proposed activities with the adult's behaviour for 40 minutes across the two days for each setting. The matrix was developed with MOT categories on one dimension and AB categories along the other dimension. The matrix information relates to the general categories alone and the findings for DD schools are presented at Figure 6.3 below. The matrix provides details on the MOT/AB relationship and includes only those cells containing at least 1% of the total number of entries and representing at least five settings. All the calculations were done using the complete set of data (See Appendix 15).

From the AB data it is known that *teaching* (35%), *routine* (19%) and *child management* (17%) categories are the most common adult behaviours recorded in DD schools. The matrix below shows that teaching occurs across 7 of the MOT categories available.

Figure 6.3: MOT/AB matrix for DD schools

Adult Behaviour Categories

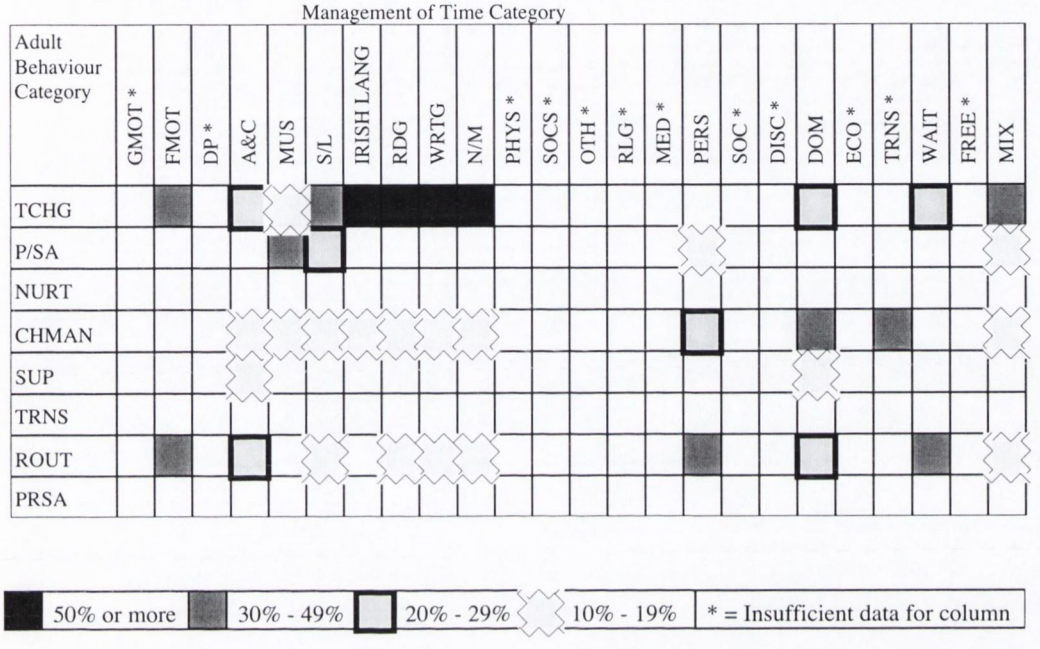
Management of Time Category	TCHG	P/SA	NURT	CHMAN	SUP	TRNS	ROUT	PRSA
GMOT								
FMOT								
DP								
A&C	X			X			X	
MUS		X						
S/L	X	X		X				
IRISH LANG	X							
RDG	X			X			X	
WRTG	X							
N/M	X			X			X	
PHYS								
SOCS								
OTH								
RLG								
MED								
PERS		X		X			X	
SOC								
DISC								
DOM				X				
ECON								
TRNS								
WAIT							X	
FREE								
MIXED	X	X		X	X		X	

* Matrix with cells containing 1% or more of the total entries in the MOT/AB matrix and representing at least 5 settings for DD schools

As one might expect, the categories included the more organised activities of *art & crafts, storytelling/language, Irish language, reading, writing, number/math* and *mixed activities.* From a sub-analysis of the *mixed activities* category it emerged that the highest proportion of the *mixed activities* proposed were in the general *preacademic* category (see Table 6.15A). The *routine* category of adult behaviour includes programme planning and operation, distributing materials, maintaining the setting and child related personal care. It appears across a variety of MOT categories including *art and crafts, reading, number/math, personal, waiting* and *mixed activities.* The *child management* behaviour is the 3rd most common AB recorded in DD schools. The matrix above indicates which of the proposed activities such *child management* is likely to occur. They vary from being recorded in the more organised categories of *arts and crafts, storytelling/language, reading, number/math* to other, less organised, activities such as *personal, domestic* and *mixed activities.*

Figure 6.3A presents detail on the percentage level of the observed AB for different MOT categories for the DD schools.

Figure 6.3A: MOT/AB matrix for DD schools – percentage observations



In DD schools the AB observed teaching behaviour occurred at or above 50% in the proposed activities of *Irish language, reading, writing* and *number/math*; at 30%-49% in the categories *fine motor* and *mixed activities* and at 20%-29% in *art and crafts, domestic* and *waiting*. Routine activity was found in 10%-29% of the proposed activity *arts and crafts* and *domestic* and at 30% to 49% in the *fine motor, personal* and *waiting* proposed categories. Child management was recorded as the 3rd most common observed AB category in DD schools but it was present largely at a moderate/low level. This is reflected in the fact that it is recorded at the level of 10%-19% across the more organised activities proposed including *arts and crafts, music, storytelling/language, Irish language, reading, writing, number/math* and at the 30%-49% level in *domestic* and *transitional* proposed activities.

Figure 6.4 presents the MOT/AB findings for NDD schools. In NDD schools teaching behaviour also occurs in 7 of the MOT categories. They reflect, in the main, the pattern found in DD schools although there is insufficient observation data for an entry at *Irish language* and there is an entry at the *personal* MOT category. Participation adult behaviour is found in 5 of the MOT categories. Adults are observed in participation and

sharing with children during *art and craft, storytelling/language, reading, writing, number/math, personal* and *mixed activities*. Routine adult behaviour was more evident in less organised activities such as *personal, domestic* and *transition* in NDD schools than in DD schools although it is recorded as a behaviour found in the *number/math* and *mixed activities* categories, the highest proportion of which are *preacademic* in NDD schools (see Table 6.15A).

Figure 6.4: MOT/AB matrix for NDD schools

Adult Behaviour Category

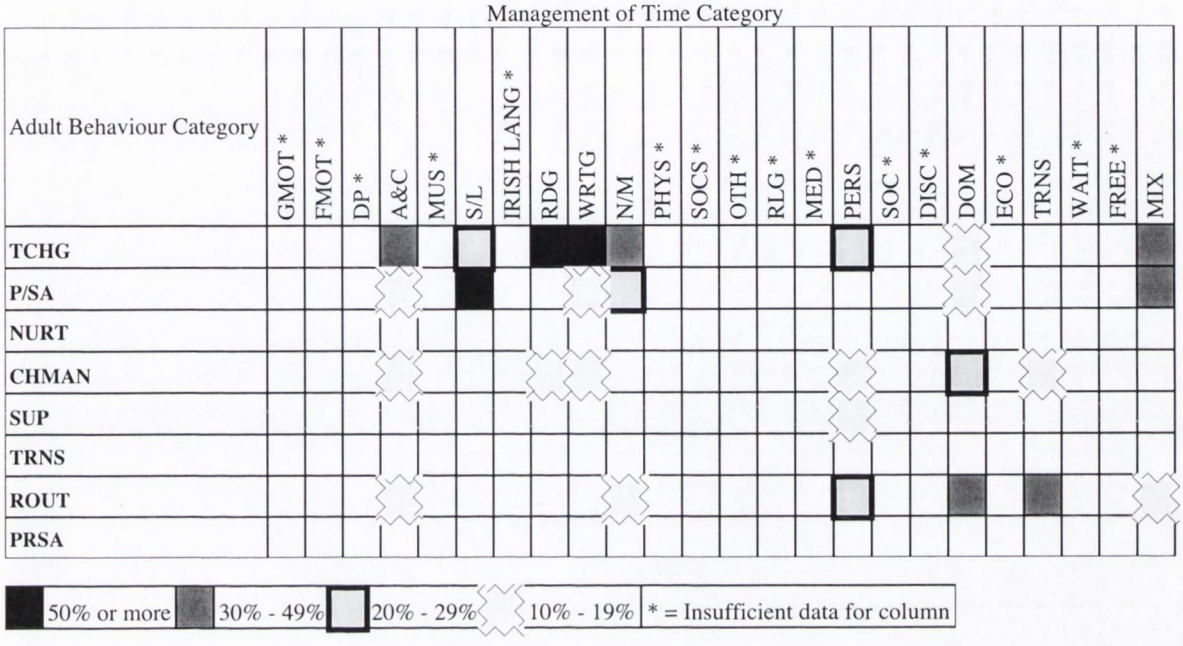
Management of Time Category	TCHG	P/SA	NURT	CHMAN	SUP	TRNS	ROUT	PRSA
GMOT								
FMOT								
DP								
A&C	X	X		X				
MUS								
S/L	X	X						
IRISH LANG								
RDG	X			X				
WRTG	X	X		X				
N/M	X	X					X	
PHYS								
SOCS								
OTH								
RLG								
MED								
PERS	X			X	X		X	
SOC								
DISC								
DOM				X			X	
ECON								
TRNS							X	
WAIT								
FREE								
MIXED	X	X					X	

*Matrix with cells containing 1% or more of the total entries in the MOT/AB matrix and representing at least 5 settings for NDD schools

There is such limited occurrence of *nurturance/expression of affection* that it does not appear in this matrix for either DD or NDD schools. This does not mean that there were no recordings of *nurturance/expression of affection* under the AB observation system but only that there was an insufficient number for inclusion in this matrix. Reviewing the analysis of the percentage distribution in the MOT categories for NDD schools in Figure 6.4A indicates that in two of the proposed activities, *reading* and *writing*, over 50% of the observations are of teaching behaviour; 30%-49% of observed AB in *arts and crafts, number/math* and *mixed activities* is teaching and in the proposed activities of *storytelling/language* and *personal activities* between 20%-29% of the observed AB is teaching. For the adult-proposed *storytelling/language* category over 50% of the observed

AB was participation/sharing and in the *mixed activities* category 30%-49% of the AB observed was participation/sharing.

Figure 6.4A: MOT/AB matrix for NDD schools in Ireland – percentage observations



6.4.3 *Relationship between setting context and process variables:*

From a regression analysis carried out on the selected setting and process variables it has been possible to present findings which shed light on how the setting variables relate to process variables. The findings presented in Table 6.29 below indicate that, in Irish national schools, variety of materials and teacher expectations are associated with more process variables than adult/child ratio or teacher characteristics. The former were related to 6 process variables while teacher characteristics were related to 4 process variables and adult/child ratio to 2 process variables.

The first setting context variable presented is group size/ratio. Under this heading no relationship was found between group size and process variables. Ratio, on the other hand, was related to 2 process variables, one under the management of time (MOT) and one under adult behaviour (AB). In classrooms where there were more children per adult the teachers proposed less large-group activities and there was less negative management recorded.

Table 6.29 Relationship between setting context and process variables

Process Variable	Contextual Variables			
	Group size/Ratio	Variety of Materials	Teacher Characteristics	Teachers' Expectations
Mot physical			experience: +	
Mot expressive				
Mot story/language			experience: -	
Mot preacademic				
Mot personal/social		dramatic: +		
Mot transition./waiting		small muscle: -		preacademic: +
Mot free				
Mot whole group	ratio: -			
CA no active engagement				preacademic: +
CA adult/child interaction			education: -	
CA child/child interaction				
CA group response		non-academic:+	experience: +	
AB teaching		dramatic: -		
AB participation				preacademic: -
AB nurturance				
AB management				preacademic: +
AB aupervision				preacademic: +
AB listening		reading: +		
AB adult-centered teaching		reading: -		
AB negative management	ratio: -			language: -

The variety of equipment and materials available in schools was related to 6 process variables across MOT, AB and CA. Availability of dramatic/imaginative play materials is related to more proposed personal/social activities and less direct teaching. The availability of non-academic materials, including art and drama materials, is associated with more group response from children. Where classrooms had small muscle equipment such as pegboards, puzzles and small construction toys available teachers proposed less transition and waiting activity. Reading materials was related to two AB process variables. Where there was a high level of reading material available, teachers listened more to children and there was less adult-centred teaching recorded. The implication from these findings is that a richer variety of materials and equipment is likely to produce more focused individual or child oriented interactions between teachers and children and less waiting around or transition activity.

Teacher characteristics of experience and education were only associated with 4 setting process variables. The more experienced teachers were found to propose less storytelling and more physical activities and were more likely to work with children in groups. The greater the education level of the teacher the less adult-child interactions were observed.

For the variable teacher expectations 5 of the 6 relationships are linked to preacademic expectations and 1 to language expectation. Teachers who had ranked preacademic skills development as one of the most important skills for four-year-olds were more likely to propose a high level of transitional and waiting activity. Somewhat unexpectedly, no relationship was found with proposed preacademic activity. Children in such classrooms were more likely to be observed in no active engagement. Teachers who rank preacademic development highly engage in less participation with children and more management of child behaviours and supervision of children. These findings suggest a close relationship between high preacademic expectations and a managing or controlling pedagogy with less positive interactions between teachers and children. Teachers with higher expectations for language development were rarely recorded in the negative management of children.

6.5 Conclusion:

The findings reported here are discussed in the next chapter and located within the context of the literature review presented in the earlier chapters of the thesis. The implications of these results for future research, policy and practice are also discussed.

CHAPTER 7

DISCUSSION AND CONCLUSIONS

Introduction:

Early childhood is defined variously in different political and cultural contexts. In much early education literature (Ireland, 1999a; OECD, 2000, 2002; Karlsson and Pramling, 2003), and in this study, it is taken to mean the period from birth to compulsory education and is recognised as a separate stage of education. It is generally agreed that the early years are a period of great and rapid development and that the immediate environments experienced by children have a profound impact on development during these early years and on subsequent development. Research has consistently found that lasting and important attitudes to learning are shaped early, crucially before the age of six. At the conclusion of this period young children, through their widening social environments, will have developed a view of themselves as learners and as communicators (Bowman et al, 2001; Donaldson et al, 1983) and a sense of their worth and abilities (Ames, 1992; Dweck & Leggett, 1988; Rutter, 1985: Sylva, 1994a). While beneficial to all children quality early education offers particular benefits to children from disadvantaged backgrounds (Bowman et al, 2001; Marcon, 1999; Schweinhart, Barnes and Weikart, 1993; Schweinhart & Weikart, 1997; Sylva, 1994a).

7.1 Early education as a separate level of education:

Paradoxically, early education is most likely to be valued as a separate level of education when located within the life-long learning paradigm and not seen as something separate from education (Pascal & Bertram, 1999; OECD, 2000). Irish policy makers have acknowledged the importance of early learning experiences and the *White Paper on Early Childhood Education* (1999a p. 15) notes that important learning characteristics associated with later success and achievement such as aspiration, pro-socialisation, self-esteem, motivation and confidence are established in the early years. Notwithstanding this, some fundamentally inappropriate and outdated ideas about children's learning remain unchallenged, particularly the notion that children are 'people in waiting' (Abbott and Moylett, 1999b, p.194). The result of this, in many cases, has been the tendency to characterise early education interventions primarily in terms of preparation for the future, preparation for school, rather than as an experience of critical importance to young

children's learning in and of itself. Concern has been expressed internationally that the very term 'preschool' has come to be seen as preparation for school and, in the process, the idea of play has been downgraded whilst work is elevated to make younger children conform to our idea of what pupils at school should be (Kagan and Zigler, 1987; Wood, 1999). For that reason most authors in the field are more comfortable with the term 'early education'.

Irish policy documents recognise early childhood as the period from birth to six years (Ireland, 1999a, 1999c). Considering this entire age span in terms of education is a relatively new departure for Ireland, complicated by the fact that, until the last two decades, most young children remained in the home until they attended school at the age of four or five years. Because of this historical fact the education of this age group was seen, in policy terms if not in actual practice, to commence with their entry into primary school. The needs of four and five year olds were incorporated into the primary school curriculum and teachers were trained to teach children from four to twelve years of age. In order to develop a useful and comprehensive approach to the wider field of early education it is essential to recognise that a substantial population of young children are now attending services outside the home from an early age and that these services are educational. In addition it is important to note that four and five-year-olds, currently attending primary school, also have particular educational needs that must take account of their earlier educational experiences and reflect the developmental features of their age.

Research in early education and related child development research has progressed from questioning whether or not early education is effective towards attempting to understand why some early educational programmes are more effective than others. Initially policy concerns about cost effectiveness directed the type of research carried out but now there is increased academic attention to early education as a research domain itself. The later studies into the identification of features influencing effectiveness have led to an improved understanding that it is not early education, per se, that is effective but quality early education. Studies have been able to identify aspects of provision that contribute to quality early education and a lot of attention has been given to methods of enhancing and ensuring quality through resourcing and training of staff. However, it is argued in this thesis that we need to move on to a more substantial analysis of why quality early education is effective. If we can identify why it is important to have good ratios, small class sizes, well trained staff and so on it becomes easier to reform current, less appropriate practice. The

importance to teachers of a sound theoretical understanding has been noted by Marcon (1999) in her observation that there was a lack of any clear theoretical knowledge among the staff in those programmes which she found afforded only mediocre outcomes for children.

Findings from studies of early educational settings across a wide range of constituencies, combined with the results from longitudinal follow-up studies of children who had attended intervention preschools in the 1960s and the rise in interest in contextual models of development began to give rise to questions about the validity of a simple input-outcome approach for evaluating effectiveness. The design of these earlier studies failed to capture the complexity of the mediating processes of the everyday experiences within early educational settings, interactive processes which are known to have an important impact on child development and later school behaviour (Bronfenbrenner & Morris, 1998; Rogoff, 1990). From the 1980's research into early education began to move beyond simply attempting to prove the effectiveness of early education towards addressing the more complex question of the quality of early education. What really happens to children in preschools settings and what is best for children (Bruner, 1980; Ruopp et al., 1979; Sylva et al., 1980)? Studies on quality found that what actually happens within the setting, the process, is influenced not only by the individuals present but by setting variables as well. Such variables include adult:child ratio; group size and the training of the adults working with the children (Bruner, 1980; Clarke-Stewart, 1991; Phillips, 1987).

7.2 Quality Early Education

We know that quality early childhood education has a positive effect on all children and on disadvantaged children in particular (Ball, 1994; Rutter, 1985; Sylva, 1994a). We know what features of early education contribute to such effectiveness. We are beginning to understand why these features matter as the educational research into affective dimensions of learning is extending and supported by developmental research. The work of Dweck and her colleagues, from an individual psychology viewpoint, has shed important light on the influence of socio-cultural and historical context on the development of learner identity, a development with the potential for influencing the quality of present learning and the direction of future learning. Her research has found that more 'adaptive individuals', those more likely to succeed in school and society, are capable of coordinating learning and performance orientations effectively, as required (Dweck & Leggett, 1988). In this

connection Carr is concerned that certain early education settings may be providing learning environments, or what she calls 'disposition milieu's, which encourage a performance rather than a learning orientation. This is an important observation given the almost universal aim of enhancing learning central to much early education literature. She points out that learning environments are themselves hugely influential because children have a strong urge to belong and they will accommodate their behaviour to whatever the rules of a new environment might be. Where environments do not, for instance, value and encourage children to show courage, playfulness, perseverance, communication and responsibility in their learning the challenge of belonging may inhibit the kind of learning thought desirable and appropriate for young (Carr, 1998). The results of this study suggest that the learning environments of four-year-olds in junior infant classes, as observed and reported, would be stretched to meet the requirements of a generative, or positive learning environment.

One cannot assume that by simply analysing and acknowledging the results of research on learning and teaching, educational practice will necessarily adjust to the new understandings. Research findings must be made meaningful and useful if they are to impact on practice. In the contemporary world where multi-theoretical approaches are regarded as most useful this may seem a daunting task (Katz, 1994, 1996). It is one aim of this thesis to make tangible links between theory and practice to inform teacher education, to assist teachers in their reflections on practice and to reform practice in the early years of the primary school. Vygotsky's prominence in much educational writing, it could be argued, owes a great deal to the meaningfulness of his construct of ZPD to the average teacher although it has been criticised as theoretically 'ephemeral' (Valsiner, 1997b) and limiting.

It is the argument of this thesis that the bio-ecological model, in its most recent iteration provides a vehicle for making a tangible link between developmental theory and educational practice, particularly in early education, in a number of ways – (i) by drawing attention to the interacting influences of different levels within the system from the immediate microsystem to the more distal macrosystem; (ii) by emphasising the crucial role of process, as well as context and content, to development; (iii) by highlighting the interactive dynamic between persons, process, context and time and (iv) by explicitly drawing attention to the importance of proximal processes, interactions, in driving development and in directing development in either a generative or disruptive direction.

7.3 Young Children Learning:

Learning is a complex, interactive and dynamic developmental process which happens in all environments, one way or another. The focus of attention in educational research has moved away from considering the most effective methods of instruction for learning, through facilitating the child construct knowledge, towards understanding the power of the interpersonal and the role of process in learning. This emphasis on the process of learning requires a renewed attention to the role and practice of the adult. Teaching in early education is primarily about relationships. It is a social endeavour which is as much about developing with children a sense of belonging as it is about learning skills or acquiring knowledge (David, 1996b). High quality early childhood education responds to the social nature of learning and the co-construction of knowledge is prized over the more traditional notion of individual learning. In this context it is prudent to take a closer look at the mediating process of learning as the actual process of interacting itself appears to be central to development. It is not enough to simply shift attention to the process; rather one must reflect on the process as the dynamic interface between the practice of teaching and the outcome of learning.

Unlike more traditional psychological and educational research, aimed at imposing 'scientific' models on cognitive activity, contemporary research *'explores the child's own framework to understand better how he comes to the views that finally prove most useful ... such research provides the teacher with a far deeper and less condescending sense of what she will encounter in the teaching and learning situation*' (Bruner, 1996, p. 58/59). This more dynamic context for education challenges us to consider what we should nurture in early education. Bruner argues that it is essential to take a multi theoretical synthesis when considering development and learning and to recognise that while skills and facts never exist *out* of context, they are no less important *in* context. He challenges educators to recognise that the child is an active, intentional being; and that knowledge is 'man-made' rather than simply there; and that knowledge about the world and each other gets constructed and negotiated with others, both contemporaries and those long departed (p. 65). In early education the challenge is to create learning environments where children develop the learning skills which facilitate later, more traditional school-based learning.

It is proposed that reconceptualising learning as development may help to highlight the complexity of learning and also challenge teachers to consider the variety of ways in which

children learn and how best to facilitate this through varied pedagogy. The research supporting the importance to development of interactions and communication in content and language rich environments also affords teacher the opportunity to consider their role in interpersonal as well as instructional terms. Despite their limitations, identified in both theory and practice, the concepts of ZPD and scaffolding provide a basis from which to extend knowledge and improve practice. Adults in early education are a critical mediating tool for development and learning – through their planning, preparation of the physical and social environment and their relationships with the children. The quality of interactions is related to the quality of development and learning. Adults assist young children in making sense of the world through a variety of mechanisms. These mechanisms include the 'scaffolding' of children's learning through carefully planned supported learning. Bruner comments on the importance of scaffolding and notes that '*as a teacher, you do not wait for readiness to happen; you foster or 'scaffold' it by deepening the child's powers at the stage where you find him or her now.*' (Bruner, 1996, pp.120). In placing fostering and scaffolding as central to effective teaching Bruner is acknowledging the educative function of the nurturing role of the teacher in early education.

The scaffolding metaphor is well known but it has been subject to renewed criticism (Rassmussen, 2001) and to review (Berk and Winsler, 1995; Bickhard, 1992; Lambert and Clyde, 2000). It is a limiting metaphor in that it emphasises a supportive rather than interactional relationship between the expert to the novice. Vygotsky's idea of children's development having different zones gave rise to the popular concept of the Zone of Proximal Development (ZPD). The ZPD is often considered co-terminus with scaffolding although both concepts were developed independently. Within the ZPD the role of the adult or expert is highlighted as instructional rather than interpersonal and as a consequence it too can be considered as an insufficient mechanism to capture the bi-directional, transformational dynamism of learning. There is a requirement in early educational discourse to consider both the interpersonal and instructional aspect of practice. Given the strength of the instructional focus in education literature it is important to highlight the interpersonal as educative in the same way as the instructional is regarded. In particular, this study has discussed the potential of an enhanced scaffolding metaphor such as the reciprocal scaffolding suggested by Lambert and Clyde (2000) as a useful mechanism for teachers to consider when reflecting on practice. Providing opportunities for effective interactive learning requires reforming traditional education and demands

careful planning, as, historically, primary schools are not organised to support collaborative learning and teachers are rarely trained to promote such learning.

The findings from developmental research and early educational studies indicate that a strong emphasis on developing the affective dimension of learning in young children positively influences children's social and academic development. Such a focus yields foundational short-term benefits and sustainable long-term benefits across social and educational domains. However, there appears to be no convincing research that a similar emphasis on the academic dimension of learning positively enhances the social or affective domain. This is not to advocate a separation out of the affective and cognitive dimensions of learning but to highlight the critical nature of both. The current work being done in the area of learning dispositions, particularly that by Margaret Carr in New Zealand, and the literature and debate emerging from more contextualised early educational settings such as Reggio Emilia and Scandinavia (OECD, 2000), offers a rich basis from which to review curricular focus, pedagogical practice and assessment of learning. Attention to nurturing the development of both the affective and cognitive dimensions of learning and fostering learning dispositions as a key role of education can be found in the works of Dewey (1938/1998) where he presents the notion of teachers and classrooms enabling the development of 'good habits of mind' in a learning community. The concept was reintroduced into the education debate by Resnick (1987) and taken up by Lillian Katz (1988) in the early education literature. Apart from their value as a developmental goal for education learning dispositions can be seen as an explanatory structure for cognitive development and, in the bio-ecological model of development, Bronfenbrenner and Morris (1998) clearly distinguish between the capabilities and dispositions of the individual while acknowledging the interaction between the two.

Many authors have noted the difference between the aims and principles of early education and the actual practices observed. One of the difficulties appears to be finding an effective mechanism for integrating data from psychological and educational theory and research in a way that has a direct resonance with teachers and influences their educational practice (Johnson, 1988; Katz, 1996; Kuhn, 1997; Pellegrini & Bjorklund, 1998; Resnick & Nelson-Le Gall, 1997). In any attempt to integrate the knowledge gained from child development and early educational research it is important that people understand that the period of early childhood is a critical one for all children in both the short and the long term. It is necessary to consider both the immediate value of the educational opportunities

and experiences and the latent, long-term effects; it is insufficient to focus primarily on the development of more traditional knowledge and skills associated with primary school. Seeking a clear and unambiguous statement on (i) quality early educational curriculum and (ii) quality pedagogy is difficult, if not futile. Research literature suggests that there is no universally appropriate curriculum or pedagogy but it is clear that curriculum and practice are very closely linked as elements in early education. Such an interlaced relationship is evident in the way in which the concept of developmentally appropriate practice (DAP) or the educational process observable in Reggio Emilia have come to be regarded as curricula, or at the very least, as approaches or models of early education. Results from longitudinal studies, supported by research into the development of young children, do suggest that early educational practices which attend to the affective development of children, which recognise and respect the active part they have in their own learning and which encourage, through dynamic interaction in a linguistic and content rich environment, the enhanced development of metacognitive skills and yield positive academic and social outcomes. If young children understand that things happen or are a certain way because of certain factors or causes they learn relatively easily, show self-motivation and will persist in goal-directed behaviours facilitating transfer of skills across tasks and situations (Brown, 1994, 1997; Meadows, 1993).

Where these skills are well established through early education, children of 7 or 8 years of age '*have fairly efficient general-purpose learning processes, and further learning is a combination of the information they have to acquire and the development of increasingly complex applications of that knowledge*' (Meadows, 1993, p. 355/356). Careful attention must be given to the development of affective and metacognitive skills, which are the foundation of later school and life success. Increasingly the importance of affective outcomes in young children has been identified by policy makers (DfEE, 1997; DES, 1999; New Zealand, 1996) and researchers (Bowman et al, 2001; Bruner, 1996; Carr, 1998, 2001a, 2001b; Katz, 1988, 1999a; Katz & Chard, 1994; Sylva and Wiltshire, 1993) but translating this awareness into practice is rather more difficult (David, 1999a, 1999b; Hayes, 1995; Pascal & Bertram, 1999; Sylva, 1994b).

Teacher assumptions about the minds of learners influence both the kind of pedagogical approach they take and the extent to which they employ language that allows children to participate actively in the learning process. Our current understanding of children as competent thinkers and active, participant learners has implications for all education but

early education in particular because, so often, young children are seen as dependent and passive in the learning situation. The work reported in this study on the development of self-regulation and metacognitive skills in young children challenges teachers to provide children with ample opportunity for real rather than ritualistic dialogue which allows for reflection, judgement, evaluation and argument in a secure and enhancing environment. Some research, currently underway in Ireland, on teaching thinking offers interesting possibilities (Donnelly, 2001; Roche, 2003).

Learning to make sense of the world dominates in early childhood education and characterises it as different from other levels of education. Studies, from both education and psychology clearly highlight the important role of interactions to facilitating the 'meaning-making' process – even from very early on (Dunn, 1987; Trevarthen, 1992; Wells, 1987). Bruner (1996) believes that '*Modern pedagogy is moving increasingly to the view that the child should be aware of her thought processes, and that it is crucial for the pedagogical theorist and teacher alike to help her to become more meta-cognitive – to be aware of how she goes about her learning and thinking as she is about the subject matter she is studying. Achieving skill and accumulating knowledge are not enough. ... Equipping her with a good theory of mind – or a theory of mental functioning – is one part...*' (p. 64). Children do not develop in an 'unpeopled vacuum' (Meadows, 1993, p.239). In respect to early education they are educated by adults and other children through the co-construction of knowledge or, as Dewey would contend, through creating new knowledge from the old in meaningful, social environments. Children require skills of observation, imitation, generalisation and de-contextualisation to gain from this experience and to succeed in education, and society in general; these skills are acquired within a social context, through social interactions.

While acknowledging the discrepancy between the recommendations that can be drawn for pedagogy from developmental psychology and the practices possible within the various cultural and economic constraints both psychological and educational research provides the basis for the articulation of certain principles which should underpin enriching early educational curriculum documents and educational practice.

There is ample literature, reviewed within this thesis, on the role of the child, the teacher and the curriculum in early education these elements are often considered separately from each other. It is argued here that a more flexible, interactive and reflective

conceptualisation of the dynamic process underlying education and intelligent action is required in Irish early education within the school context. This would result in (i) an enhanced awareness and attention to the detail of learning contexts, or dispositional milieu (Carr, 2001a), as influencing factors in young children's development, (ii) a shift towards a nurturing rather than instructional pedagogy and (iii) attention to an emergent rather than a prescribed curriculum. Such a shift challenges teacher education to lay a rich foundation in both developmental and subject knowledge so that practices appropriate to enhancing young children's learning dispositions and skills can develop in a responsive learning environment that is both language and content rich and dynamically interactive.

7.4 What does Early Education look like for Irish Four-year-olds at Primary School?

Studies of normative development yield valuable baseline data for informing our understanding of dynamic, individual development in the real world. However, to fully appreciate the development of individual children it is necessary to consider and take account of the differential experiences, expectations and motivations of the individual and the contexts within which development occurs. Unfortunately, this does not always happen in research and *'behavioural research on children, for the most part, is not geared to investigating transactions, encompassing a multiplicity of influences, measuring environments in non static and developmental terms, addressing developmental questions developmentally or accounting for individual differences in development out'* (Radke-Yarrow, 1987). Taking on this challenge and following Wertsch (1998) and Farver (1999), this study argues that the child is best understood when studied as an active agent within those environmental contexts that are of importance to them at particular ages. In more traditional research the child is identified as a unit for research and tends to be studied by reference to his or her individual characteristics; the different contexts within which individual behaviour occurs are also treated as separate units rather than by reference to the whole process of which the 'child in context' is a participating part. However, it is now recognised that the importance of information gathered on each separate dimension in a given context is augmented and most useful when considered in the tensioned, bi-directional and transformational relation they have to each other. One context of particular importance to four-year-olds in Ireland is the early educational environment within the primary school: it is this context that has provided the empirical data reported in this thesis.

The primary objective of this thesis was to gather, present and discuss reliable observation data on what four-year-olds are doing at school and locate the analysis and discussion in the context of national and international research and policy. To this end the study has been a success. Overall the work has benefited by the author's involvement as National Research Coordinator of the Irish element of the IEA Preprimary Project in that the sub-sample used was a nationally representative sample, something that would not have been possible under other circumstances. Such a sample lends weight to the findings and to their implications. However, there were also some limitations to utilising the IEA data. In particular the author had only limited discretion with respect to the instruments used. While the integrated observation system developed for the project was a valuable and robust research instrument the design of the study did not allow for direct engagement with the children's own views and neither did the study sufficiently assess the relationships and interactions observable within the settings. The fact that the study did not engage directly with children to access their own views on early education can be seen as a reflection of the temporal context (1986-1992) within which the study was designed. While not directly gathering such data from children the study was conscious of the ethical implications of working with such young children and the Irish element of the IEA project paid careful attention to the rights of the children as participants in the study. To this end permission was sought from parents for their child's participation and the sample selected was drawn only from this group. In addition no child was forced to participate against his or her will or to continue with the study if they showed any signs of fatigue or distress. In the event all selected children participated fully.

7.4.1 Irish four-year-olds in junior infant class:

This study found a great deal of similarity across schools in Ireland. This is not a surprise given the fact that, in common with all four-year-olds in Irish primary schools, the four-year-olds in this study were attending classes which follow a prescribed curriculum and were taught by teachers who all (with the exception of one substitute teacher) had degree-level training following a nationally agreed teacher education programme. The picture of this period of early education that emerges is one of Irish four-year-olds in junior infant classes alongside, on average, 24 other four-year-olds and one teacher[31]. Within these settings children attended primarily to the teacher, usually in a whole group situation. Most

[31] Current OECD figures indicate that this continues to be the average pupil:teacher ratio in Irish primary classrooms (OECD, 2003) although improved investment in certain disadvantaged areas has been targeted at reducing the pupil:teacher ratio in junior classes.

observations recorded children in activities selected by the teacher, with limited freedom to choose activities other than those suggested. Findings indicate a low level of child-child or adult-child interactions with children mainly observed working silently. When they were recorded as talking this was most common during periods of social or expressive activity.

Classrooms are safe places for young children and virtually no accidents were observed during this study. There is little variation in the amount and the type of material and equipment found in each classroom. The most common materials recorded related to preacademic activities, fine motor skills, art and media-related activities. In DD schools there was a greater availability of media-related equipment such as tape recorders and TV/videos. This finding may reflect greater state investment in equipping DD schools than NDD schools. Less than half the settings were recorded as having computer equipment but this data was collected before the primary school computer initiative and there are likely to be more computers in all schools now. There has been only limited research into the impact of materials on child and teacher behaviour and what research does exist suggests that different materials have diverse effects on behaviour (Nash, 1981; Smith & Connolly, 1980; Sylva et al., 1980). In the analysis into the relationship between setting and process variables this study found a relationship between certain process variables in the learning environment and the variety of materials recorded in classrooms. The greater the amount of dramatic materials present, for instance, the higher level of personal/social activities proposed by teachers. In classrooms with limited dramatic materials teachers were more likely to engage in direct teaching behaviour. Where there were more non-academic materials there was greater group response recorded in the children's activity. Where there was a high level of reading materials present teachers were more likely to listen to children and where there was limited reading materials they were less likely to engage in adult-centred teaching. This suggests that reading, which was recorded as the activity with the highest level of match between MOT and CA in both settings, is the category in which much of the recorded adult-child interactions and adult listening occurred. Shortly after data collection was completed for this study there was a 'once off' Department of Education and Science equipment grant of £1500 made to all junior infant classes. This funding was a response to teachers concern that there was insufficient funding available to allow schools purchase materials and equipment appropriate to four and five year olds. The grant was a single payment by the department to allow schools redress this. The extent to which this grant has led to either an increase in the variety of materials and equipment

available and/or a change in teaching behaviours and child activity warrants further research.

Class sizes were similar across the settings although designated disadvantaged schools generally had smaller classes with an average of 24 children compared to an average of 27 in NDD schools. Some four-year-olds were in classes with as few as 15 children and a small number of these were mixed age classes in rural schools. Creating opportunities for responsive interactions between teachers and children is often presented as important in early education and clearly supported by developmental theories (Bredekamp & Copple, 1997; Hendrick, 1996; Kontos, & Wilcox-Herzog, 1997; Spodek, 1982; Spodek and Saracho, 1991). These are most likely to be observed in settings with small group sizes and better adult:child ratios. While current research is not sufficient to suggest an optimal class size it does indicate that smaller class sizes and better adult:child ratios benefit children in early education, particularly children from poorer family backgrounds. Studies in the US have found that a reduction in class size to 15 children, for children aged 5 to 8 years, leads to increased achievement in reading, maths and sciences in later school and fewer repeat years (Bowman et al, 2001). A further review of the research findings suggests that development is enhanced not only if class sizes are small but also where classrooms are child-focused and well organised, with teachers playing a facilitative rather than a didactic role (Bowman et al., 2001; Howes & Olenick, 1986; McCartney, 1984). Research considering whether it is the group size or the adult:child ratio that is the critical factor has found that improving the adult:child ratio by the addition of staff to the group is not as effective as decreasing class size (Mosteller, 1995 cited in Bowman et al., 2001).

The research on class size is not conclusive and some US research suggests that while smaller class sizes do benefit young children simply lowering the class size may be insufficient to guarantee positive effect (Goldstein & Blatchford, 1998; Pellegrini & Blatchford, 2000). The dynamic of the system and the impact of contexts nested within the classroom itself must also be taken into account. There will, for instance, be a different impact on the child of whole group work in a group of thirty children compared to the impact of working in one of six groups of five children. In recent years in the UK the practice of small group teaching in early education has been criticised as ineffective by certain policy makers and commentators and it has been recommended that teachers adopt a whole group approach while recognising that this must be interactive. Resulting initiatives such as the 'literacy hour' have been found to be prescriptive and have been

criticised by the early years community (Cox, 1996; David, 1999b; Mills & Mills, 1997). Improved investment in Irish primary schools should improve the adult:child ratio and bring it closer to that recommended for all four year olds. This should facilitate a more interactive and informal pedagogy. The results of this study indicate that further research is necessary into how teachers provide for interactions in their teaching at infant level and what mechanisms would assist in improving the situation in line with our current understanding of quality early education for the older preschool child.

7.4.2 Teachers in junior infant classes – their expectations and beliefs:

This study, like many others, found a moderate level of discrepancy between teacher's expressed beliefs and expectations and what is actually observed in the classroom, particularly in relation to language development and social skills with peers. Results also show that there is some interaction between teacher expectations and the type of learning opportunities four-year-olds have available to them. Where teachers place an emphasis on the development of preacademic skills, and this study found a high percentage of such teachers across both settings, teachers propose more transitional and waiting activities and their teaching style includes a significant level of supervision and child management with limited participation in child activities. When one reviews the relationship between teacher expectations and child activity there is a link found between preacademic expectations, proposing preacademic activities and moderately high levels of no active engagement. This finding is supported by the results reported in the MOT/CA matrices for both settings. The pattern that emerges from this analysis is one of classrooms where teachers maintain a strong degree of control over the children's learning environment and opportunities and where few social interactions between teachers and individual children are observed. Within these classrooms children attend to the teacher to a moderately high degree and, when not attending, they are not likely to be engaged in any other activity.

Some international research has found that differences exist between the expectations and beliefs of parents and teachers (Tizard & Hughes, 1984). However, this is not a universal finding and appears to be more evident in countries where there is a lack of clarity or agreement about the aims and objectives for early education (OECD, 2000). In countries such as Sweden, which has a long tradition of publicly funded early education for children up to the age of six and a national early education curriculum integrated into the main educational curriculum, there is a high level of agreement between parents and teachers in

terms of what they consider important for young children (Carlson & Stenmalm, 1989). Recent Australian research suggests that with increased attention to early education and agreed policy aims and objectives parents and teachers increasingly concur in their view that the primary role of early education as facilitating children's social and emotional development, with preparation for school and academic skills being considered of secondary importance (Lockwood & Fleet, 1999; Page et al, 2000). The findings from this study suggest only limited agreement between Irish parent and teacher expectations for four-year-olds. The development of social skills with peers was considered important by both teachers and parents, while the development of social skills with adults was considered important by parents who considered it to be the responsibility of teachers. However, it was ranked as one of the least important skills by teachers themselves, suggesting a lack of sensitivity to the crucial role in development and learning of meaningful interactions with adults which contemporary research is highlighting (Berk and Winsler, 1995; Bruner, 1996; Kuhn, 1997; Rogoff, 1990, 1998). This is translated into observed practice where teaching is highly adult-centred and children were found to interact with teachers to a low degree and often in the context of one-to-one teaching in subject areas such as reading.

7.4.3 Teaching style and practice

Teachers were recorded most often teaching in a traditional manner although there was greater variety in the strategies used by teachers in the DD schools. The analysis of the relationship between activities proposed (MOT) and child activities (CA) recorded in both settings show a strong match between the MOT/CA categories in general with some variation in the pattern across settings. In DD schools the strongest level of match was found in the writing and number/maths sub-categories. In NDD schools the strongest level of match was found in the gross motor, Irish language, number/maths and media-related sub-categories. Across categories there was a moderate level of social or no active engagement categories recorded in a number of the matched categories. Teachers in DD schools appear to use the social sub-category of sharing and show-and-tell activities as a teaching strategy to a greater extent and across a wider number of sub-categories than teachers in NDD schools. Only a small degree of relationship was found between teacher characteristics and setting process variables. The greater their teaching experience the more likely teachers were to propose physical activities and the more children were observed in large group activities. Less experienced teachers proposed storytelling/ language activities more frequently than those who were more experienced. There was no

relationship found between teaching experience and education in terms of observed adult behaviour. This is most likely a reflection of the similarity between teacher training courses in the five teacher training colleges in Ireland.

Teaching was defined by reference to a number of specific behaviours and could be classified as either adult-centred or child-centred teaching. In adult-centred teaching the teacher has greater control of the content and the activities available to the children. She provides the information the she wants the child to learn such as *giving/receiving information or knowledge* or *eliciting information or knowledge*. On the other hand child-centred teaching includes behaviours that actively involved the children in guiding the learning process such as *offering choices, encouraging activity* or *providing assistance, clarification and/or suggesting solutions*. A special analysis of adult listening behaviour in all settings was carried out. It shows a low level of adult listening behaviour (3%) mainly observed within the *teaching* and *nurturance* categories of adult behaviour. Within the *teaching* category listening occurred at a level of 8.5% across all schools. Listening was of two types: (i) an answer given by a child to a factual question or (ii) a child-initiated verbalisation such as an opinion or a request. The type of listening recorded differed across settings with significantly more listening to child-initiated verbalisation observed in NDD schools. No listening behaviour was recorded for the adult under the heading of child management.

Findings show that, in the majority of cases, the teachers observed taught in an adult-centred way with the mean percentage of adult-centred teaching in DD and NDD schools 87% and 76% respectively. This high level of adult-centred teaching is unexpected, particularly given the child-centred nature of the curriculum and the belief expressed by most teachers that the development of social skills with peers is most important for children of this age. The finding is also a cause for concern because such teaching creates the type of learning environment or dispositional milieu which research studies indicate cultivates performance rather than mastery learning in young children (Dweck, 1999; Carr, 1999, 2001a). In his review of educational practice in Irish primary schools Sugrue (1990) observed that while researchers (Archer & O'Rourke, 1982; Fontes & Kellaghan, 1977) have reported that informality in teaching practice is more prevalent in the infant classes than other primary classes the question remains as to whether it is sufficiently informal. He observes that '*the available evidence strongly supports the thesis that primary teachers believe the child is central to the educative process. There is little evidence to suggest,*

however, that this has resulted in widespread use of informal teaching methods.... At present teaching .... is formal and didactic in its approach' (p.19.). The findings reported here provide empirical support for Sugrue's observation.

Sugrue's review highlights the formality of primary teaching and his synthesis of different research findings suggests that teachers consider that informality makes heavy demands on the teacher. At the same time, teachers do acknowledge that it facilitates teaching pupils to think for themselves and allows them develop their full potential. Despite this, teaching continues to be formal and didactic. There is no doubt that a shift towards informal teaching practice does require a significant shift in approach away from the traditional style of teaching, the style experienced by most teachers in their own education. Dewey was one of the first authors who noted that the more informal the pedagogy, the greater the need for a formal structuring of the learning environment (Bruner, 1996; Dewey, 1938/1998; Gardner, 1999). This structure does not require a particularly ordered or rigid routine or environment but rather can be expressed in pedagogy by the teacher through careful, informed and reflective planning from a rich knowledge base. To achieve any significant change in teaching practice a radical review of, and increased investment in, pre-service and in-service teacher training will be necessary (Byrne, 2000; Dunphy, 2000; Government of Ireland, 2002; Kernan, 2000; McGough, 2002; Sugrue, 1990).

7.4.4 The process in junior infant classes

Teachers in this study propose whole-group activity for a majority of class time with no teacher proposing this configuration less than 56% of the time. At least one school in both DD and NDD settings were observed in whole-group activity throughout all of the two non-consecutive days of observation. There were no observations of any teacher in either school setting proposing joint activity or working alone for children. With governmental commitment to lowering class sizes in Ireland, particularly in DD schools, this may alter. However, such a pervasive finding suggests that joint activity and working alone is not considered an appropriate teaching strategy by teachers in infant classes and this warrants further investigation.

Given the high percentage of whole group activities proposed by teachers and the fact that many children were observed in large group activities it may seem unexpected that such a high proportion of activities observed was recorded as being child-initiated. It is possible that the finding reflects the common teaching strategy where a teacher specifies a number

of possible options within a particular activity, such as maths, from which the child would then choose. Thus, while the child's activity is recorded as child-initiated it may, in fact, be occurring within the context of an adult-proposed major activity. Teachers were found to propose the active involvement of children 100% of the time. This high percentage is somewhat incompatible with the detail gathered on child activity, which recorded an overall 13% of time observed in the *no active engagement* category. This finding suggests that the instrument used to assess this type of involvement may not have been sufficiently discriminating or, alternatively, that the definition of active participation may have been too wide.

Findings on the interactions of children during observation indicate a low level of interaction between children and adults and also among children themselves. While children were almost always observed in a room with at least one adult present they were rarely recorded as interacting with that adult. Also, while children were mostly observed in the company of children they were rarely recorded as interacting with them. An analysis of interactions found that half of the classrooms in this study recorded 10% or less child-child interaction. In general this study found limited opportunity for children to choose activities themselves or to engage in free play and other play-like activities where they would be most likely to interact with each other. These findings suggest a need to review teacher training for those working with our youngest children in primary schools so that interactions are located as a central element of practice. In addition, the primary curriculum should be reviewed to place more emphasis on the importance of play and interactions in early education.

Four-year-olds in Irish junior infant classes were found to be following a broadly traditional curriculum where the 'three Rs' still predominate. In at least one DD school and one NDD school children were observed in preacademic activity for over three-quarters of the observation period while the level was 25% or over in all schools. Irish is identified as a specific subject area in the curriculum and, as such, it was included as a separate category for consideration in this study. The most common sub-categories observed were reading, writing and number/maths. Within the preacademic category teachers proposed Irish language activities 3% of the time in DD settings and 6% of the time in NDD schools. Child activity observations found a relatively good match with the proposed preacademic sub-categories. Where children were not recorded as engaged in a proposed sub-category they tended to be observed in either the social or no active engagement sub-category.

Teachers in primary schools in Ireland follow a national curriculum with all children from four to twelve years of age. This curriculum details the syllabus for subject areas and gives guidelines to teachers about how it should be implemented with different age groups including a guideline on the amount of time per week to be spent on each subject area. Teachers are advised that they have flexibility in how this time allocation is achieved over the week and are encouraged to reflect the principles of a child-centred and integrated curriculum in their teaching practice[32](See Appendix 16). In light of our current knowledge about suitable and effective early educational curriculum and pedagogy the findings from this study raise questions about the relevance of a subject-based curriculum implemented to meet such definite time allocations, particularly for four-year-olds attending designated disadvantaged schools. The development of an early education curriculum framework for children from birth to six, currently underway within the NCCA, affords an important opportunity to review the primary curriculum for junior (and senior) infant classes.

The development of language and communication skills is an important task for four-year old children. At this age children use language to describe the world around them and in their efforts to understand it, and also to communicate desires and needs. As they develop and use their interpersonal skills their use of language develops. The children in this study were rarely observed in *storytelling/language* activity (6%), which was proposed 8% of the time. The modest discrepancy between the proposed and observed category may reflect a number of children observed in transitional or no active engagement category during storytelling. The children in this study did not spend much time talking either with the teacher or with each other; a finding which is reflected in results from other studies (Horgan, 1995; INTO, 1995). In Horgan's study children in junior infant classrooms spend more time sitting side by side than in any other social context but they were rarely observed in direct interaction or conversation with each other. Of the percentage observations of verbalisation recorded in this study most was found in the *personal/social* and *religion* categories across both settings, categories proposed at a moderate and low level respectively. The high level of verbalisation recorded under the *religion* category is noteworthy. This category was proposed 3% of the time and generally involved children in a very particular style of language behaviour such as saying prayers or responding to

[32] The findings reported here are broadly in line with curricular recommendations with the exception of Irish: however, the relatively low level of Irish language recorded can be explained by Irish reading and writing being recorded under these sub-categories rather than the Irish language one.

specific questions. In categories most frequently proposed by teachers, such as the *preacademic* category, there was a moderate to low level of child verbalisation recorded. This is an unexpectedly low level of verbalisation to find among four-year-olds given that teachers ranked language development as an important skill for children to develop. In addition research and literature highlight the importance of language development to this age group and the valuable contribution that language makes as a mechanism for consolidating metacognitive skills where children discuss the knowledge they are constructing, articulate verbally the procedures they are using and use language to check their knowledge and their procedures with adults and with children. The findings suggest that the learning environment for four-year-olds is one that emphasises the quiet, individual attention of the child to either the teacher or the task and is not dependent on or encouraging of verbal interactions in those activities considered important by teachers.

Well-organised and child-focused classrooms enhance children's development particularly where teachers play an active, facilitative role rather than a didactic one (Bredekamp & Rosegrant, 1992; Schweinhart, 2002). High quality learning environments are those where teachers interact with children in a responsive and informative way and are not harsh with children (Arnett, 1989; Clarke-Stewart & Gruber, 1994), where they have high expectations of children in terms of social and linguistic development and where they encourage verbal and social interactions. Key features of high quality early education include: classrooms with fewer children, opportunities for child-to-child interactions and teachers with a high level of appropriate training who give specific and responsive attention to individual children and are reflective and flexible in their planning and practice.

The picture of Irish classrooms reported in this study is at odds with what one might expect to find in the learning environment of four-year-olds given the available information from current research and literature on how young children learn, what skills and knowledge should be nurtured, what activities are most developmentally appropriate and what pedagogical style is most effective. In Irish junior infant classrooms both the learning environment and learning opportunities are controlled by the teacher and, most of the time, children are actively attending to her and engaged in tasks proposed by her. In general teachers engage in teaching the traditional subjects of primary school using formal and didactic teaching strategies. Children have limited choice in or control over the activities they engage in and, while teachers are recorded as proposing active participation at all

times, the findings do not show children actively participating in their learning in a manner consistent with that advocated by contemporary early education research and literature. There is limited evidence of planning for the encouragement of either language or social skills development.

The findings from this study present a number of challenges for researchers, policy makers and practitioners interested in early education in Ireland and for the education of four-year-olds in particular.

7.5 What Early Education should look like for Four-year-olds:

Based on the review of literature presented in this thesis it is argued that the development of affective skills, learning dispositions and metacognitive skills be the main focus of early education with the content knowledge and associated skills, typical of more traditional curricula, less dominant. Rather than attending to the implementation of a given curriculum research suggests that it is more effective to have a well-trained workforce, familiar with normative development and subject material, who recognise the dynamic and individual nature of development in the early years and who can work with an emerging curriculum which is driven by the interests and experiences of the children and the opportunities afforded by the environment. Cultivating positive learning dispositions and feelings in young children leads to positive outcomes in social and cognitive development and the skills necessary for later school success. It is an holistic, adaptive and, ultimately, more effective approach to early education than that usually found in primary school. However, it is not easy to transfer this position from the theoretical to the practical because, as Marcon (1999) has observed, policy makers, and some teachers, *'frequently believe that earlier academic preparation ... will best prepare young children for school-learning'* (p. 373). This, despite research findings strongly indicating that this is not the best approach for positive overall socio-academic development and it does not lay the basis for later school success.

When applied to the education of four-year-olds in junior infant classes this is a radically different way of approaching education. It requires a shift in focus from a determined curriculum content, particular teaching styles and educational outcomes to a renewed focus on the interactive nature of the learning process in early education and the contribution of all, including the child and the context, to this process. This is not simply to reiterate the

'child-centred' approach to education, which underpins primary curriculum in Ireland, but rather to give a developmental and educational model to facilitate a 'child-sensitive' education as advocated by Sugrue (1990). It has guided practice in a number of countries including Scandinavia, New Zealand and Italy and within a variety of different models of education.

7.5.1 Teaching young children

One of the difficulties in translating research findings into practice is that practice happens in the real world and learning is a far more dynamic and messy process than any text can capture. The literature review carried out for this study illustrates the importance of attending to this dynamic and messy process and informing such attention by reference to our increased knowledge about and understanding of the components of the process and their interdependence. Early education models of practice have been guided by principles derived from the study of development and pedagogy, by societal values and by the aims that policymakers have for education. While many of these aims are laudable they have been constrained in their realisation by being presented alongside demands for predetermined, measurable outcomes to facilitate, among other things, a rationale for investment in early education.

In Ireland there is a strong policy focus on increasing the educational opportunities of children from disadvantaged areas. However, there has been relatively little investment into early educational interventions and those interventions have had less of an impact than expected (Kellaghan & Greaney, 1993; Ryan et al., 1998). This may reflect a tendency to develop such initiatives from a deficit model, implicit in the use of terms such as 'compensatory education' (Hayes, 1995; Ireland, 1995) and in the aim of 'educating' parents (Ireland, 1999a). To have a positive impact in the lives of young children, particularly those from disadvantaged backgrounds, it is necessary to recognise and respect the fact that children are active agents and participants in their development. Recognising the child's active contribution to the process of learning reflects the rise in attention to children's participation in education emerging from psychological, sociological and rights research (Hayes, 2002; David, 1999c) and calls for a new pedagogical approach. To understand how young children are learning it is necessary to observe, see, listen to and hear them. This requires respectful and reflective practice on the part of the teacher who has a sound knowledge base in content areas and in normative development. It also involves engaging with children and seeing them as people, as more than simply human

capital (Abbott & Moylett, 1999b). Such a pedagogy presumes that all minds are capable of holding ideas and beliefs which, through discussion and interaction, can be moved towards some shared frame of reference and is child-sensitive, less patronising and more respectful of children's own role in their development. In the early years understanding the dynamic development of individual children is critical as it presents insight into the varied levels of cognitive, affective and social development more typical than in later years; normative development affords a valuable benchmark against which to check the dynamic development of individual children, should such checks be necessary.

The data emerging from current child development research support many of Dewey's assertions about how best to facilitate learning. For instance he believed that equipping children with problem solving skills – through the scientific method – was a central responsibility for education because it assisted children in developing the skills and knowledge necessary to cope with a changing world. The importance of developing problem-solving skills – or metacognition - is seen as a key feature of quality early educational provision by current researchers and practitioners (Ball, 1994; Bowman et al., 2001; Kuhn, 1997; Meadows, 1993; Sylva, 1994a). His ideas on educational practice, strengthened by support for contemporary developmental research, are informing innovative practices and curricular models within early education (Bruner, 1996; Cuffaro, 1995; Darling & Nisbet, 2000; Glassman &Whaley, 2000; Tanner, 1997)

Learning environments created from this perspective are less likely to be characterised as compensatory and will offer choice to children, facilitate interactions with peers, adults and interesting materials and will be peopled by well trained adults who develop an 'emergent' curriculum informed by listening to and observing children in consultation with parents. Effective early interventions for young children and families in disadvantaged circumstances no longer focus exclusively on educational interventions for these children; rather such interventions are part of an integrated package of supports, provided to a wider population base, which can be accessed as necessary. The findings of this study indicate that there is a pressing need to reconsider how we educate four-years-olds and the extent to which the curriculum and pedagogy is likely to have the positive impact required.

7.5.2 Recognising the educative nature of care:

The independent development of the educational and childcare sectors has been identified as one of the key problems facing the reform and development of early education in

Ireland as, traditionally the communication between the two traditions has been rather limited (ERC, 1998). The power and influence of this historical distinction can be seen in the government *White Paper on Early Childhood Education* (Ireland, 1999a) which commits to the underlying principle that *'for young children, education and care should not be separated.'*(p.4) while at the same time noting that *'care is the dominant requirement of children aged less than 3 years and ... education is a more significant need of older children.'* (p. 4). Results from this study suggest that teachers of four-year-olds give considerably more time to traditional primary school teaching than to the care and nurturing interactions recommended for quality and effective early education.

Despite references to the need to balance the care and education aspects of early education there is a tendency to underestimate the educative role of caring. This thesis argues that it is limiting to consider the issue in terms of the balance between care and education at different levels of education, as attempted in the White Paper (1999a). Rather it may be more meaningful to consider care as a dimension of education and not a separate construct. A significant shift in understanding the role of care in practice requires an explicit acknowledgement of the critical contribution of the interpersonal aspect of early education. To emphasise this it has been argued that there is a need to reconceptualise care as nurture in order that its status as an educative dimension be enhanced. The caring responsibility of the adult – where it recognises that care should be more than merely 'minding' - gives an enhanced educational role to it. The idea of considering care as nurture gives it an active connotation with a responsibility on the adult to provide nurturance and foster learning rather than to simply mind or protect the child.

Such a shift in emphasis would raise the expectations we have of teachers in early education. The role of the adult in early childhood education is crucial and multi-faceted (Athey, 1990). It is a combination of listener, questioner, advisor, demonstrator, actor, sympathiser, negotiator, assessor and guide. This thesis contends that the adult must also recognise their role as a 'learner', a reflective observer of children who learns from observation and uses this as the basis for pedagogical practice. If adults are to nurture children's learning as part of the educative process they must develop skills of observation and reflection to allow for the non-intrusive planning and provision of a learning environment that supports and extends children's own learning. In order to nurture an adult must inter-actively nourish, rear, foster, train and educate the child. To nurture

requires an engaged, bidirectional level of interaction and confers on the early years teacher an enhanced, educational role.

In the literature on developmentally appropriate practice in early education efforts have been made to encourage teachers away from didactic practice by giving care and education equal status. However, attempts to raise the status of care in early education, such as the coining of the term 'educare' (Caldwell, 1989), have not been very successful and have been criticised in being operationally weak (Karlsson & Pramling, 2003). This thesis argues that a more useful notion for practice is that of a 'nurturing pedagogy' which recognises the educative role of care as nurture and both challenges and permits teachers of young children to give time to planning for the 'soft' and messy aspects of early learning and encourage playful interaction, exploration, dialogue and collaborative learning to encourage and support young children's learning.

A nurturing pedagogy allows for positive interactions between child and adult but also allows for planning by the adult for future opportunities that might extend the child's own learning; it gives a role to the adult which takes the child as central. It fosters the processes of interaction, dialogue and planning leading to the co-construction of knowledge. Where the teacher is observing and listening to young children and reflecting on these observations, the curriculum plan is based on an assessment of their interests and developmental level as well as their needs and the aims of education. Through a reflective and nurturing pedagogy teachers can also identify difficulties in individual development and move to address them either in the context of the classroom setting or through outside interventions and supports. Implicit in the concept of a nurturing pedagogy is the idea that pedagogy is, itself, a form of assessment (Carr, 2001a; Rogoff, 1997) and a guide to an emergent and responsive curriculum (Abbott & Nutbrown, 2001; Edwards et al, 1995). Finally, a nurturing pedagogy extends the underlying idea of respect for the child as a participating partner in the learning process while at the same time recognising and articulating a mechanism for respecting the dual nature of early education as care and education.

7.6 Conclusion and Recommendations:

In concluding a study into the activities of four-year-olds in school one might expect a clear and comprehensive synthesis of psychological and educational theories about how

young children learn and which curricular and pedagogical approach is most effective. The situation is not so simple. This study proposes a number of ways to assist in the task.

Firstly, it is proposed that early education curriculum and practice is best served if, supporting Kuhn (1992, 1995, 1999), development and learning is considered as the same complex process rather than separating them out for consideration. In this way the polarisation often found in literature and debate between the Piagetian argument that development precedes learning and the Vygotskyan view the learning precedes development (in so far as their views can be so reduced) ceases to be an issue. Such a shift in thinking has important implications for early educational practice.

Considering learning as development highlights the importance of attending to the dynamic development of the individual child in the context of a rich understanding of normative development. It challenges teachers to recognise the ongoing contribution the child makes to its own development and the learning environment through their active participation. Such a view of development also allows for each developmental period to be valued for that specific time as proposed by Pellegrini and Bjorklund (1998). From such a perspective, 'childish' behaviours are seen as adaptive to the period and not regarded as imperfect but rather as important responses to the niche of childhood. Different behaviours may serve present and future functions at one and the same time. The essence of 'being developmental' in teaching is to be observant and reflective and discover the qualitative changes, via transformation, that occur through time. This challenges teachers to value the moment for its immediate developmental contribution to the child whilst acknowledging (but not overemphasising) its potential in respect of later development. The danger is in ignoring the one at the expense of the other.

Secondly, the field of early childhood development and education is wide and heterogonous and too unwieldy for a neat theoretical synthesis to be anything more than a housekeeping exercise which would ultimately be a constraint to responsive and reflective practice. Rather than approaching the task in this way the bio-ecological model is presented as a framework for considering the various elements of development and the developmental process itself. A systems approach to understanding child development within the dynamism of an early learning environment provides the teacher with a set of connected elements forming a working whole, it requires attention, not only to the

elements themselves, but also to the connectedness of those elements and the mechanism, the interactions, for such connections.

The bio-ecological model allows for a multi-theoretical approach to understanding early child development and the factors which influence it. It facilitates the study of early educational theory and practice and provides a framework for linking the structural, or biological aspects of learning to the social and environmental aspects, both structural and process, in a way that emphasises bi-directional effect, dynamism and change. In particular this model identifies the critical importance of the day-to-day interactions within the environment to a young child's development. The quality of the 'proximal processes', referred to as the engines of development, have a profound effect on the development of individual children and they can be generative or disruptive. It is the role of the teacher, in early education in particular, to provide a learning environment that cultivates generative learning dispositions in the developing child through ensuring that the proximal processes are rich and challenging.

Finally, a shift towards the proposed 'nurturing pedagogy' in the early years of primary school will require more than a revised curriculum or a stated commitment in policy documents, it will require a reform of teaching practice which has implications for teacher education. In the influential StartRight Report (1994) Ball noted that the calibre and training of professionals who work with children are key determinants of high quality provision. Despite the apparent obviousness of such a statement, and the empirical support for it, debate about how best to train teachers for work in early education has not been high on the Irish agenda. Training continues to be addressed in terms of the existing structures within which children are educated rather than in terms of the children as learners. As a result, recent reports on primary teaching continue to maintain the view that the current approach to primary teacher education, the provision of a generalist degree, is appropriate and adequate for the education of children within the primary school (Irish National Teachers Organisation/St Patricks College, 2000; Ireland, 2001). Outside the school sector, there has been increased attention to, and financial support for, training in a sector with very few trained personnel (Ireland, 2002). However, there has been no substantial development in addressing the issue across the early education sector as a whole. This has resulted in the artificial distinction between care and education being shored up by existing structures with no attempt to challenge the status quo. Concern has been expressed that the continued commitment, in teacher education, to a generalist degree may be insufficient for

teachers working in early education and there have been calls for a more creative and developmental interface between colleges of education and other 3rd level colleges providing professional education and training for early educators. Such links and developments could be facilitated through the Centre of Early Childhood Development and Education (CECDE) established under the White Paper (1999a) and charged with developing a national quality framework for the early years sector as a whole.

But curriculum and practice are intimately intertwined in early education. To effect the shift necessary to progress change in early education it will also be necessary for there to be leadership in curricular reform. The current work of the National Council for Curriculum and Assessment on developing a curriculum framework for early education across the ages from birth to six, in consultation with the whole sector, affords an exciting opportunity to break down the structural and psychological barrier for the benefit of children, teachers and society in general.

There has been very limited research in the field of early childhood education in Ireland when compared with the international situation. While this study represents an important contribution to a growing body of research there is a need for more extensive studies of this type and there are indications that this is beginning to happen. Universities and other third level colleges are beginning to provide specific training in the area and to support clusters of post-graduate research. The Department of Education and Science and the Department of Justice, Equality and Law Reform have both committed to supporting research to inform policy. To this end the Department of Education and Science, together with Saint Patrick's College of Education and the Dublin Institute of Technology, are supporting the Centre for Early Childhood Development and Education (CECDE) in their programme of work and their research plan. The CECDE research plan is particularly focused around quality in early education and researching such issues as transition from preschool to primary school, the role of play in early education and the specific needs of traveller children in the early years.

There are many possible areas of research in early education emerging in contemporary Ireland and addressed in this thesis. Some areas for further research are identified below:

* The present study has highlighted the need for carefully designed research into the dynamics of development in context. In particular there is a need to study the relationships

and interactions in early years settings. The findings from this study suggest a need to seriously review pedagogical practices in this regard and good quality research will provide a basis from which to inform training and practice.

* Recalling Marcon's findings (1999) on the importance of a sound theoretical basis for effective early educational practice it would be valuable to carry out research investigating the underpinning theories of practitioners, managers and policy makers that inform and guide current teaching practice and curriculum development.

* This study argues that young children learn best when participating actively in the learning process. Results suggest that children in Irish junior infant classes are taught in a traditional manner and are not actively engaged in the process to the fullest extent possible. Carefully designed research would shed light on the barriers that might exist to integrating what we know about the way young children learn best with early educational pedagogy.

* Another area for research highlighted by the findings of this study is the way in which the teacher groups children in the classroom. Results presented here are somewhat contradictory. On the one hand they suggest that teachers use whole group methods as their main approach and direct young children's activities whilst on the other the results also suggest that many of the activities observed are child-initiated. It would be useful to establish to what extent children are in fact free to choose activities across the school day.

* In line with the current commitments to giving voice to children in matters that affect them (Hayes, 2002; Ireland, 2000a; United Nations, 1989) there is an opportunity to apply innovative methodologies in attempting to explore children's views on topics such as play, education and learning. This study was limited in not addressing this important element directly. There is a great deal of current attention to researching directly with children in different contexts and many innovative studies that could guide a research project in this area.

* The development of learning dispositions is proposed, by this study, as central to any curriculum for young children. Of particular interest is the extent to which the learning environment encourages the development of generative or disruptive learning dispositions in young children. This is an emerging area of research in early education and one that

could form a valuable basis for informing teacher training, curriculum planning and general policy development in education.

* Nineteen ninety-nine saw the publication of a revised primary curriculum. It is timely to consider a replication of this present study in junior infant classes to assess the extent to which the revised curriculum and the associated pre-service and in-service training supports have actually impacted on teaching practice and the experiences of the four-year-olds in the class.

* The classrooms observed in this study had limited variety and amounts of equipment and materials. Subsequent to the study reported here all junior infant classes in Ireland were allocated a special equipment grant. This was intended to augment the materials and equipment available for use by children attending. It would be illustrative to assess the extent to which this has impacted on the variety and quality of materials available in junior infant classes, the style of teaching and the children's experiences since this present study was carried out.

This thesis contends that there is an urgent need, based on the literature review presented alongside the empirical data, for a radical review of the early educational experiences of young children in Ireland and, in particular, the educational experiences of four-year-olds in primary school. Such a review will require continued research into early education in Ireland and reform of early childhood education curriculum and practice with implications for teacher education. It will also require a shift to supporting appropriate, effective and quality early education so that Irish four-year-olds can experience enhancing education in learning environments that are empowering and enabling for them in the here and now while guiding them along the path through lifelong learning well equipped with the necessary learning dispositions, knowledge and skills to succeed.

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APPENDICES

Appendix 1:

Distinguishing dispositions:

In an effort to distinguish the concept of disposition from other personal characteristics such as *traits, skills, attitudes, habits, thought processes, motives* and *work inhibition* Katz makes the following points (1993, p. 4-9[33].)

On *traits* as disposition Katz argues their difference because a disposition implies a trend in a person's actions rather than his or her emotional state. Traits are seen as too fixed an explanatory concept for many behaviours as they do not take account of the transactional relationship in development of the bio-psychological individual and the social context (Lave and Wenger, 1991). The concept of dispositions, on the other hand, suggests the possibility of characteristics which may grow in complexity and subtlety with experience. Terms like honesty, ambition and courage describe a person's character but not a disposition. A disposition can be implied by terms designating actions and judged in terms of frequency such as explorer, problem solver, bully.

In relation to *skills* and dispositions they are seen as quite different in that a child may have the skill of a reader but no inclination, or disposition to read. The frequency of reading in different contexts will be an indicator of the presence or not of a disposition.

Attitudes and dispositions differ in that an attitude could be seen as a pre-disposition; that is one could have an attitude towards something without accompanying behaviour. Disposition, on the other hand, is by Katz's definition evident by trends in actions.

Katz contends that *habits* are performed without conscious attention, there is no need to invoke acts of thought, reflection or analysis to explain a habit. Dispositions on the other hand, refer to trends in actions that are intentional on the part of the actor in a particular context at particular times.

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[33] The paging of materials downloaded from ERIC.EECE documents is dependent on the printer used and may vary from printout to printout. Those used for this study were printed on HP laser printer on A4 paper.

On *thought processes* and dispositions Katz, drawing on the work of Resnick (1987) writing about critical thinking and Perkins et al (1993) writing about thinking dispositions, argues that the construct of disposition is useful in distinguishing capability and capacity in thinking from their manifestation in action.

Motivation, or the *motive* to learn, is a common construct discussed in educational writing and is seen as a more general a construct than disposition. There has been extensive work in this area (for instance Ames, 1992; Dweck, 1989 Dweck, 1991; Dweck & Leggett, 1988; Dweck & Elliott, 1988). These authors have analysed the factors which encourage the development of mastery orientation (Ames)/learning orientation (Dweck and colleagues) as opposed to helpless/performance orientation in children. The latter orientation in children is seen to reflect children who are more concerned with the judgement of others than their own role in learning; they tend to be less confident children with a poor identity as learner; they are less likely to consider learning to result from effort and see it as a result of their own ability or lack of ability. Mastery or learning orientation in a child can be characterised as a disposition to learn.

Katz attributes the concept of *work inhibition* to Bruns (1992) and it is used to refer to those able children who do not do the work required of them in school, they tend to move 'off task' even though clearly able to persist. Bruns writes that the origins of work inhibition begin in infancy although they may not be apparent in school-work until the mid elementary grades. Katz suggests that this concept could usefully be categorised as a disposition and notes that even by early elementary education (about age 5) some children show a reluctance to attempt new tasks as their dispositions to persevere have been damaged or weakened.

Appendix 2:

On the concept of Readiness

The notion of readiness is prevalent in the literature on early education and transition to primary school. The OECD (2002) has noted that *'[I]n English speaking countries, with many at-risk children in their societies, ministries or large-scale agencies are concerned to obtain a measure of learning achievement of young children, or at least, of the 'readiness for school'* (p. 28). Attention to – and the prevalence of – the concept arises because governments and funders frequently require 'objective' evidence about what young children actually learn in early education settings, about the cost-effectiveness of this period of education. In the Irish context it is clear from policy documents (1999a; 1999b) that the primary role of early education – whether in primary school classes or elsewhere – is to prepare children for school.

There have been many critiques of the concept of 'school readiness' formulated. Bruner, for instance, notes that the concept of readiness is a *'mischievous half-truth' because a teacher does not 'wait for readiness to happen; you foster or 'scaffold' it by deepening the child's powers at the stage where you find him or her now'* (Bruner, 1996, p.120). Meisels (1999) has identified four different views of readiness derived from four particular theoretical orientations. The *maturational view* which follows the tradition of children 'unfolding' towards maturity. The source of any delay in readiness is seen to rest internally within the child who may need more time to mature socially, emotionally or intellectually. The *environmental view* defines readiness in terms of when children have developed certain externally defined skills such as knowing their own name, address, colours, letters. From within this view children can be taught readiness. The *social constructivist view* of readiness considers it in a socio-cultural context, in terms of the expectations of those in the learning environment and *the interactionist view* characterises readiness as a relative term and highlights the role of interactions between the characteristics of the child and the environment with each influencing the other.

Certain conceptions of readiness – particularly the maturational and the environmental view – might allow one to wait for readiness to manifest itself. This is to miss

opportunities for learning and to misunderstand the dynamic process that development is and the role that the many interrelated variables have to play. Watson (1996) reviews some of the pre-theoretical assumptions and recurring ideas about readiness that have waxed and waned from the time of Comenius, through Dewey to Bruner and the current theory of mind and concludes that 'it becomes evident that the readiness question is not simply when to teach but rather how and what to teach. Reducing readiness to a uni-dimensional when question derives from a maturationist view, one that ... has been roundly discredited' (p.166). She suggests that the most effective conceptualisation of readiness can be drawn from the work of Dewey, who saw readiness as a function of the ' interaction between an active, discovering child and a *progressive*, child-centred curriculum in which formal knowledge is rendered accessible to the child' (Watson, p. 151 – emphasis in the original). Such a view of readiness comes close to the notion of learning dispositions as proposed by Carr where one is alert to the child in context and the goals of education are to enhance the development of children as ready, willing and able learners.

The White Paper on Early Childhood Education (Ireland, 1999b) states that '*this White Paper seeks to ensure lasting benefits in terms of educational achievement for all children. In this context, it focuses on supporting and developing early childhood education which prepares children for the transition to school and creates in them a disposition and readiness to learn'* (p. 41, emphasis added)

The White Paper defines disposition and readiness as follows:

> The disposition to learn '*involves the development of social skills and behaviour patterns in young children which will facilitate their integration into formal education. This will ensure that children will adjust well to transition to the primary school system and culture and have the capacity and motivation to master new skills and challenges'* (p. 14/15). The definition is not accompanied by any detail as to what social skills or behaviour patterns are being referred to here.
>
> '*Readiness to learn relates to the fact children who begin schooling with solid foundations in place will be better placed to develop their potential. It involves many aspects including health, social and emotional development, language use and general knowledge. It is [i.e. readiness] an essential part of the idea that, though not necessarily involving formal education, the early years represent a vital*

part of a life long involvement in learning' (p. 15). There is no expansion on what a 'solid foundation' means and the aspects involved are only generally addressed.

From a review of recent literature on readiness and early education in Ireland it seems to remain focussed on preparation for school and school based learning. The rich possibilities, for policy and practice, of attention to facilitating the development of generative learning dispositions as a key goal in early education have not been well elaborated.

Appendix 3:

Principles for early education: Curriculum guidance for the UK Foundation Stage (QCA/DfEE, London: HMSO - 2000)

- Effective education requires both a relevant curriculum and practitioners who understand and are able to implement the curriculum requirements
- Effective education requires practitioners who understand that children develop rapidly during the early years – physically, intellectually, emotionally and socially. Children are entitled to provision that supports and extends knowledge, skills, understanding and confidence and helps them to overcome any disadvantage.
- Practitioners should ensure that all children feel included, secure and valued. They must build positive relationships with parents in order to work effectively with them and their children.
- Early years experience should build on what children already know and can do. It should also encourage a positive attitude and disposition to learn and aim to prevent early failure.
- No child should be excluded or disadvantaged because of ethnicity, culture or religion, home language, family background, special educational needs, disability, gender or ability.
- Parents and practitioners should work together in an atmosphere of mutual respect within which children can have security and confidence.
- To be effective, an early years curriculum should be carefully structured. In that structure, there should be three strands:

  Provision for the different starting points from which children develop their learning, building on what they can already do;

  Relevant and appropriate content that matches the different levels of young children's needs;

  Planned and purposeful activity that provides opportunities for teaching and learning, both indoors and outdoors.
- There should be opportunities for children to engage in activities planned by adults and also those that they plan or initiate themselves. Children do not make a distinction between 'play' and 'work' and neither should practitioners. Children need time to become engrossed, work in depth and complete activities.

- Practitioners must be able to observe and respond appropriately to children, informed by a knowledge of how children develop and learn and a clear understanding of the possible next steps in their development and learning.
- Well-planned, purposeful activity and appropriate intervention by practitioners will engage children in the learning process and help them make progress in their learning.
- For children to have rich and stimulating experiences, the learning environment should be well planned and well organised. It provides the structure for teaching within which children explore, experiment, plan and make decisions for themselves, thus enabling them to learn, develop and make good progress.
- Above all, effective learning and development for young children requires high quality care and education by practitioners.

These principles are the basis on which every part of this guidance has been developed and are reflected throughout (pp. 11-12).

Appendix 4:

Principles from the UK Quality in Diversity project

The Early Childhood Education Forum in the UK published a list of underpinning principles for their work on Quality in Diversity (1998):

- Learning begins at birth.
- Care and education are inseparable- quality care is educational and quality education is caring.
- Every child develops at his or her own pace, but adults can stimulate and encourage learning.
- All children benefit from developmentally appropriate care and education.
- Skilled and careful observation is the key to helping children learn.
- Cultural and physical diversity should be respected and valued: A proactive anti-bias approach should be adopted and stereotypes challenged.
- Learning is holistic and cannot be compartmentalised: trust, motivation, interest, enjoyment and physical and social skills are as important as purely cognitive gains.
- Young children learn best through play, first hand experience and talk.
- Carers and educators should work in partnership with parents, who are their children's first educators[34].
- Quality care and education require well-trained educators/carers and on-going training and support (pp. 3).

This distinction between carer and educator appears to perpetuate the care and education split which is rejected as meaningful at point 2 above.

Appendix 5:

Principles of the Irish Primary School Curriculum

The principles of the curriculum from the *Primary School Curriculum: Introduction* (Ireland, 1999) read:

The principles of the full and harmonious development of the child and of making allowance for individual difference (as outlined in the 1971 curriculum) are redefined in the broader concepts of

- celebrating the uniqueness of the child.
- ensuring the development of the child's full potential.

The three pedagogical principles dealing with activity and discovery methods, an integrated curriculum and environment-based learning (as outlined in the 1971 curriculum) are subsumed into a wider range of learning principles that help to characterise more fully the learning process that the revised curriculum envisages. The more important of these are:

- The child's sense of wonder and natural curiosity is a primary motivating factor in learning.
- The child is an active agent in his or her learning.
- Learning is developmental in nature.
- The child's existing knowledge and experience form the base for learning.
- The child's immediate environment provides the context for learning.
- Learning should involve guided activity and discovery methods.
- Language is central in the learning process.
- The child should perceive the aesthetic dimension in learning.
- Social and emotional dimensions are important factors in learning.
- Learning is most effective when it is integrated.
- Skills that facilitate the transfer of learning should be fostered.
- Higher-order thinking and problem-solving skills should be developed.
- Collaborative learning should feature in the learning process.
- The range of individual difference should be taken into account in the learning process
- Assessment is an integral part of teaching and learning (p. 9/10).

These principles are further elaborated in later sections of the document.

Appendix 6:

Agreed values of practice for the early childhood sector

The agreed values for practice within the Irish early childhood care and education sector (Ireland, 2002) read that:

The sector values:

- Childhood in its own right.
- The rights of children, who are active agents in their own growth and development.
- Parents, guardians and family as the child's primary source of wellbeing.
- Professional development as central to good practice.
- The role of the practitioner as the facilitator of enhanced wellbeing and development of the child.
- Diversity by acknowledging and promoting each child's and each adult's individual, personal and cultural identity.
- Equality of access and participation in services.
- A positive approach to Irish language and culture.
- The right to protection from any form of abuse, neglect and discrimination.
- The right of children, families and childcare staff to confidentiality, balanced with the interests of the child and the right of all to protection from harm.
- Experiences and activities which support learning and allow children to actively explore, to experience, to make choices and decisions and to share in the learning process.
- Play as a natural, constructive mode of children's interactions with their peers, adults and environment (p.17).

Appendix 7:

School setting and sample selection:

School settings:

Initial contact with the sample was made through schools from information given by the Department of Education. The department provided a complete listing of primary schools. The department also provided a separate list of primary school in designated disadvantaged areas from which the designated disadvantaged (DD) sample of schools was made. These schools were removed from the original list so that duplication in sampling the non-designated disadvantaged (NDD) would not occur. The Irish National Teachers Organisation (INTO) was supportive of the project and asked schools to facilitate data collection if at all possible.

Sample selection:

The final sample was developed as follows:

A listing of children attending all relevant primary schools was obtained. The listing was divided into DD and NDD schools. Approximately equal numbers of settings were selected from each cell. From each setting in each cell researchers chose a maximum of four children from those attending in the target age-range.

(a) Non-designated disadvantaged schools:

Twenty-six schools were originally to be selected. The data from the department was ordered by enrolment figures with the highest enrolment school first. This facilitated use of the Probability Proportional to Size (PPS) procedure for selecting the sample 26.

The total number of schools was 3,223. The interval necessary to select 26 from this list was 20,107 (based on enrolment figures). The random start figure, selected using Excel RAND, was 3.092.

As the list included all primary schools, a small number of the initial selection were senior or special schools. Where this occurred the next school was selected. In total, 28 non-

designated disadvantaged schools participated in the study with 101 children. The sample was greater than the original 26 intended because not all settings had four eligible children.

(b) Designated-disadvantaged schools:
Twenty-six schools were to be selected. A list of all designated disadvantaged schools was received from the department. As with the general sample, it was ordered according to enrolment figures. Using PPS a sample of 26 schools was selected.

The total number of designated disadvantaged was 258. the interval necessary to select 26 schools was 2,963 (based on enrolment figures). The random start figure, selected using Excel RAND was 2,716. In total, 27 designated disadvantaged schools participated in the study, with 102 children.

Appendix 8:

Categories used in the three observation systems:

Management of Time	Child Activities	Adult Behaviour
A. PHYSICAL ACTIVITIES	A. PHYSICAL ACTIVITIES	A. INFORMATIONAL/FACILITATIVE TEACHING STRATEGIES
1. Gross-Motor	1. Gross-Motor	1. Giving/Receiving Information/Knowledge (content)
2. Fine-Motor	2. Fine-Motor	2. Giving/Receiving Information/Knowledge (non-content)
B. EXPRESSIVE ACTIVITIES	B. EXPRESSIVE ACTIVITIES	3. Giving Demonstrations
1. Dramatic/Imaginative Play	1. Dramatic/Imaginative Play	4. Eliciting Information/Knowledge (concepts)
2. Arts and Crafts	2. Arts and Crafts	5. Eliciting Information/Knowledge (thoughts)
3. Music	3. Music	6. Eliciting an Action or Behaviour
C. STORYTELLING/LANGUAGE	C. STORYTELLING/LANGUAGE	7. Offering Choices
D. PREACADEMIC ACTIVITIES	D. PREACADEMIC ACTIVITIES	8. Encouraging Activity
1. Reading	1. Reading	9. Providing Assistance/Clarification/Suggesting Solutions
2. Writing	2. Writing	10. Providing Feedback (positive)
3. Numbers/Math	3. Numbers/Math	11. Providing Feedback (negative)
4. Physical Science	4. Physical Science	B. PARTICIPATION/SHARED ACTIVITIES
5. Social Science	5. Social Science	C. NURTURANCE/EXPRESSIONS OF AFFECT
6. Others/Miscellaneous	6. Others/Miscellaneous	1. Engaging in Affectionate/Friendly Behaviour
E. RELIGIOUS ACTIVITIES	E. RELIGIOUS ACTIVITIES	2. Giving Reassurance and Support
F. MEDIA-RELATED ACTIVITIES	F. MEDIA-RELATED ACTIVITIES	3. Engaging in Neutral Behaviour
G. PERSONAL/SOCIAL ACTIVITIES	G. PERSONAL/SOCIAL ACTIVITIES	4. Engaging in Negative Affective Expression/Behavior
1. Personal Care	1. Personal Care	D. CHILD MANAGEMENT
2. Social	2. Social	1. Establishing/Reminding Child of Rules
3. Discipline	3. Discipline	2. Verbal/Physical Intervention
H. (No Equivalent Activity)	H. EXPRESSIONS OF EMOTION	3. Giving an Order
	1. Positive	4. Giving Permission
	2. Negative	5. Refusing Permission
I. DOMESTIC/ECONOMIC ACTIVITIES	I. DOMESTIC/ECONOMIC ACTIVITIES	6. Listening to Child's Requests for Permission
1. Domestic Activities	1. Domestic Activities	7. Problem-solving/Conflict Resolution
2. Economic Activities	2. Economic Activities	8. Providing Feedback (positive)
J. TRANSITIONAL ACTIVITIES	J. TRANSITIONAL ACTIVITIES	9. Providing Feedback (negative)
K. (No Equivalent Activity)	K. ACCIDENTS	10. Calls for Attention
L. WAITING	L. NO ACTIVE ENGAGEMENT	E. SUPERVISION
M. (No Equivalent Activity)	M. OTHER/MISCELLANEOUS	F. TRANSITIONAL ACTIVITIES
N. FREE ACTIVITIES		G. ROUTINE ACTIVITIES
O. MIXED ACTIVITIES		1. Program Planning and Operation
		2. Distributing Materials and/or Rearranging Furnishings
		3. Child-related Personal Care
		4. Maintenance of the Setting
		H. PERSONAL ACTIVITIES

Appendix 9:

Categories used in the three observation systems

Sample schedule sheet for CA observation:

Time			Child Activities	Talk	INV		Social Context (Use T's and/or +'s)					
Hr	Min	Sec	Description	T	L	P	A	WC	2-6	7+	WA	GR

T = Talk; L = Listening; P = Participating; A= Alone; WC= With one child; 2-6= In a group of 2-6; 7+ = In a group of 7 or more children; WA = with adult; GR = Whole group.

Sample schedule sheet for AB observation:

Time			Adult Behaviour	Degree of Involvement				
Hr	Min	Sec	Description	Non Part	Super	S&S Inter	Dir	Part

NonPart = non-participation; Super = supervision; S&S = Short and specific intervention; Dir = direction; Part = participation

Sample schedule sheet for MOT observation:

Time			Management of Time	INV		Group Structure			
Hr	Min	Sec	Description	L	P	WG	PG	JA	A

L=listening; P=participation; WG=whole group; PG=part group; JA=joint activity; A=alone

Appendix 10:

Expectation Instrument – eight skills and associated sub-skills:

Language skills – Child learns to express his or her thoughts and feelings verbally in a clear and appropriate manner

- To engage in conversation with peers and adults
- To pronounce words correctly
- To use new words properly
- To describe an experience lately
- To ask questions when he/she is confused or curious
- To explain his/her point of view
- To retell stories or make up his/her own stories
- To answer questions about a story
- To communicate his/her feelings in words

Motor/physical skills – Child improves his/her co-ordination, balance and agility through large-muscle activities

- To run, skip and jump
- To throw, kick, hit or catch a ball
- To use a slide, swing or climbing structure
- To ride a bike or other riding toy
- To balance on one leg
- To hop on one foot
- To do a somersault
- To exercise, do callisthenics or follow a movement routine
- To play organised physical games (e.g. chasing games)

Preacademic skills – Child learns basic concepts, improves small-muscle coordination and begins to master skills necessary for reading, writing and arithmetic

- To recognise shapes and colours
- To identify opposites
- To understand concepts of size and quantity
- To understand concepts of classification and seriation
- To understand temporal and spatial relationships
- To build with or manipulate small objects (Lego, stringing beads, puzzles)
- To copy numbers and letters/characters of the native language
- To recognise numbers and letters/characters of the native language
- To recognise his/her first name
- To count from 1 – 10
- To concentrate and focus attention on a task or activity (listen attentively to stories, complete a worksheet)

Self-assessment skills – Child learns to assess his/her own abilities and behaviours; begins to take pride in his/her accomplishments and develops a sense of self-confidence.

- To know which skills/activities he/she does well and which he/she could improve
- To learn to judge the appropriateness of his/her own behaviour
- To have his/her own ideas and opinions
- To be aware of his/her emotions and to feel comfortable expressing them appropriately
- To be proud of his/her work
- To feel good about him/herself
- To dare to try new things

Self-expression skills – Child learns to express him/herself creatively through arts and crafts, music, dance and/or imaginative play.

- To create a picture, design or three-dimensional object with handicraft materials
- To manipulate sensory materials (play-dough, clay, sand, finger-paint)
- To listen attentively to music

Self-expression skills cont/d.:

To create or imitate simple rhythms

To sing songs, rhymes and finger-play

To dance to music

To play imaginatively with toys

To role-play daily life scenes with or without propos (puppets, dolls, blocks, trucks, dress-up clothes)

Self-sufficiency skills – Child learns to be independent and to care for him/herself and his/her belongings in a responsible manner

To play by him/herself

To dress him/herself

To attend to his/her personal needs (use the toilet, wash-hands or face, brush teeth)

To clean or pick up after him/herself

To not lose or forget his/her belongings

To learn to keep his/her things in order

To ask for help when needed

To show persistence in a task or activity and to finish what he/she begins

To eat what is good for his/her health

To know how to use a telephone

To recognise and avoid dangerous behaviours, objects and products in the environment

Social skills with adults – Child learns to listen to, cooperate with and respect adults

To initiate interactions with adults

To be quiet when asked

To be polite

To listen carefully to adults

To be cooperative with adults

To follow directions

To correct his/her mistake with an adult (admit when he/she is wrong, to apologise, to help clean up)

To be honest with adults

To treat adults respectfully

Social skills with peers – Child learns to share and cooperate with other children, to respect them and to understand their feelings

To initiate interactions with other children and to form friendships

To play cooperatively with other children

To share toys

To correct his/her mistake with a peer (admit when he/she is wrong, to apologise, to give back a toy)

To treat other children's work or belongings with respect

To understand that other children have different opinions

To offer help to other children in difficulty

To comfort another child in distress

To express anger or frustration with peers appropriately

Appendix 11:

Materials and equipment list:

Slides*
Climbers*
Swing set
Scooters
Pedal cars*
Bicycles
Tricycles
Basketballs
Basketball hoop
Tree house
Jungle gym
Ladders
Climbing ropes
Balance beams
Bouncing board
Wagons
Roller-skates
Jump ropes
Balls*
Big building toys*
Bean bags
Bats/sticks/racquets
Hula hoop
Pools/sprinkler
Rocker
Pull toys
Parachutes
Jumpers
Chalk*
Water-colour paints*

Sleds
Water table/toys*
Sandbox toys*
Playdough*
Puzzles/Table-top*
Small construction
Small wheel toys
Child carpentry
Sewing/lacing card
Weaving material
Beads
Peg boards*
Doll houses
Doll house toys
Dolls/ethnic dolls
Toy villages
Toy farms
Toy petrol stations
Toy airport
Dress-up clothes*
Play props*
Play people
Toy workbench
Puppets
Playhouse*
Child-size play-furniture*
Pencils/pens*
Crayons*
Books*

Finger paints
Tempera paints
Other paints
Paint brushes
Paper, various*
Scissors*
Clay*
Glue/paste
Starch
Chalkboards
Easels*
Other materials
Real instruments*
Toy instruments
Songs/song books
Tapes/records*
Rhythm instruments*
Rocks
Feathers
Bones
Furs
Plants
Shells
Leather
Animals to hold
Animals to observe
Prisms
Magnifying glasses
Aquarium

Workbooks*
Magazines
Newspapers
Shape sorter
Colour games
Number games*
Stacking/sorting
Films/filmstrip
Videos
Letter games*
Comic books
Card games
Board games
Television*
Radio
Projector
Screen
Video recorder
Video player*
Record player
Tape recorder*
Computer*
Pots/pans
Utensils
Dishes
Baking supplies
Cots/mats/beds
Gym mats
Large trucks

* The material and equipment most frequently reported by teachers and used in the analysis.

Appendix 12:

Table 6.17A: Group structure intended for each type of teacher-proposed activity in DD and NDD schools

	Nondisadvantaged National Schools (N = 26 settings) (151 hours)						Nondisadvantaged National Schools (N = 26 settings) (151 hours)					
Category	Total# ofHours	Mean% ofHours	%Whole-group	%Part-Group	%JointActivity	%Alone	Total# ofHours	Mean% ofHours	%Whole-group	%Part-Group	%Joint Activity	%Alone
Overall	**164**	**100**	**88**	**12**	**0**	**0**	**151**	**100**	**85**	**15**	**0**	**0**
Physical	**9**	**5**	**100**	**0**	**0**	**0**	**9**	**6**	**100**	**0**	**0**	**0**
Gross-motor	6	3	100	0	0	0	6	4	100	0	0	0
Fine-motor	3	2	100	8	0	0	3	2	100	0	0	0
Expressive	**23**	**14**	**97**	**3**	**0**	**0**	**12**	**8**	**100**	**0**	**0**	**0**
Dramatic play	0	0	—	—	—	—	2	1	—	—	—	—
Arts and crafts	15	9	100	0	0	0	7	5	100	0	0	0
Music	8	5	94	4	0	0	3	2	100	0	0	0
Storytelling/language	**11**	**7**	**100**	**0**	**0**	**0**	**13**	**9**	**100**	**0**	**0**	**0**
Preacademic	**37**	**22**	**100**	**0**	**0**	**0**	**46**	**30**	**100**	**0**	**0**	**0**
Reading	8	5	100	0	0	0	12	8	100	0	0	0
Irish language	5	3	100	0	0	0	8	5	100	0	0	0
Writing	7	4	100	0	0	0	12	8	100	0	0	0
Numbers/math	12	7	100	0	0	0	12	8	100	0	0	0
Physical science	2	1	—	—	—	—	1	1	—	—	—	—
Social Science	0	0	—	—	—	—	0	0	—	—	—	—
Other	3	2	100	0	0	0	1	0	—	—	—	—
Religious/ethics	**3**	**2**	**100**	**0**	**0**	**0**	**6**	**4**	**0**	**0**	**0**	**0**
Media-related	**3**	**2**	**100**	**0**	**0**	**0**	**2**	**1**	**—**	**—**	**—**	**—**
Personal/social	**30**	**18**	**98**	**2**	**0**	**0**	**21**	**14**	**100**	**0**	**0**	**0**
Personal care	27	16	98	2	0	0	20	13	100	0	0	0
Social	2	1	—	—	—	—	1	1	—	—	—	—
Discipline	1	1	—	—	—	—	0	0	—	—	—	—
Domestic/economic	**7**	**4**	**100**	**0**	**0**	**0**	**4**	**3**	**100**	**0**	**0**	**0**
Domestic	7	4	100	0	0	0	4	3	100	0	0	0
Economic	0	0	—	—	—	—	0	0	0	0	0	0
Transitional	**5**	**3**	**100**	**0**	**0**	**0**	**4**	**2**	**100**	**0**	**0**	**0**
Waiting	**3**	**2**	**100**	**0**	**0**	**0**	**2**	**1**	**—**	**—**	**—**	**—**
Free activities	**14**	**9**	**100**	**0**	**0**	**0**	**10**	**7**	**100**	**0**	**0**	**0**
Mixed activities	**19**	**12**	**3**	**97**	**0**	**0**	**22**	**15**	**0**	**100**	**0**	**0**
Other/no information	**0**	**0**	**NI**	**NI**	**NI**	**NI**	**0**	**0**	**NI**	**NI**	**NI**	**NI**

Appendix 13:

Table 6.20A: Percentage of observations in all categories during which child was verbalising in DD and NDD schools

	Disadvantaged National Schools (N = 94 children) (7,520 entries)			Nondisadvantaged National Schools (N = 91 children) (7,280 entries)		
Category	Total # of Observations	Mean % of Observations	% Verbal	Total # of Observations	Mean % of Observations	% Verbal
Overall	**7,520**	**100**	**17**	**7,280**	**100**	**15**
Physical	**697**	**9**	**11**	**723**	**10**	**23**
Gross-motor	181	2	5	323	4	37
Fine-motor	516	7	13	399	6	11
Expressive	**1,073**	**14**	**15**	**788**	**11**	**15**
Dramatic play	153	2	12	123	2	23
Arts and crafts	645	8	8	528	7	12
Music	275	4	32	137	2	24
Storytelling/language	**286**	**4**	**20**	**552**	**8**	**11**
Preacademic	**1,870**	**25**	**14**	**1,985**	**27**	**15**
Reading	441	6	25	591	8	21
Irish language	187	3	28	267	4	23
Writing	386	5	4	477	7	6
Numbers/math	693	9	10	551	8	12
Physical science	68	1	9	37	0	22
Social science	9	0	—	28	0	—
Other	85	1	8	33	0	6
Religious/ethics	**76**	**1**	**36**	**96**	**1**	**24**
Media-related	**177**	**2**	**5**	**119**	**2**	**13**
Personal/social	**1,479**	**20**	**41**	**1,215**	**17**	**29**
Personal care	302	4	9	490	7	8
Social	1,068	14	54	635	9	49
Discipline	109	2	5	90	1	6
Expressions of emotion	**53**	**1**	**17**	**86**	**1**	**12**
Positive	26	0	—	38	0	8
Negative	27	1	—	48	1	15
Domestic/economic	**136**	**2**	**13**	**80**	**1**	**2**
Domestic	136	2	13	80	1	2
Economic	0	0	0	0	0	0
Transitional	**453**	**6**	**2**	**464**	**6**	**2**
Accidents	**7**	**0**	**—**	**8**	**0**	**—**
No active engagement	**975**	**13**	**1**	**868**	**12**	**0**
Other/no information	**238**	**3**	**NI**	**296**	**4**	**NI**

Appendix 14:

Child management behaviours:

Positive	Neutral	Negative
Gives permission	Explains rule/reminds child of rules	Intervenes verbally or physically
Problems-solving/conflict resolution	Listens to child's comments about rules	Gives an order
Listens to child's problem and/or solutions	Listens to child's response to an order	Refuses permission
Gives positive feedback	Listens to child's requests for permission	Gives negative feedback
	Listens to child's comments on feedback	Calls for attention

Appendix 15:

Actual number of observations for each combination of proposed activity (MOT) and adult behaviour (AB) in DD schools

Management of Time Category	*TCHG*	*P/SA*	*NURT*	*CHMAN*	*SUP*	*TRNS*	*ROUT*	*PRSA*	*OTH/NI*	*TOTAL*
GMOT	13	2	4	14	10	1	3	2		49
FMOT	19	7		11	1	1	19	2		60
DP										0
A&C	51	18	2	25	19	12	46	2		175
MUS	11	33		13	4		16		1	78
S/L	61	52	6	34	7	1	20	2	2	185
IRISH LANG	65	18	1	12	4	2	10		1	113
RDG	112	13	3	28	7	9	21	3		196
WRTG	48	4		12	7	1	13	3		88
N/M	90	26	1	27	10	4	21	1		180
PHYS										0
SOCS	21			1	5		5	2		34
OTH	16	23	1	1	1		1			43
RLG	17	8	1	8	2	1	5			42
MED	1		9	2	7			1	1	21
PERS	18	21	11	38	15	7	72	11		193
SOC	1	6		2	1		5	3		18
DISC				2			2			4
DOM	14	6	1	23	8	1	18			71
ECON										0
TRNS	16	1		19	6	2	2			46
WAIT	13	5		6	9	2	30			65
FREE		14	2	8		1	9	5		39
MIXED	109	41	4	51	25	6	55	7		298
OTHER/NI	15	14	13	15	4	1	16	3	1	82
TOTAL	711	312	59	352	152	52	389	47	6	2,080

Actual number of observations for each combination of proposed activity (MOT) and adult behaviour (AB) in NDD schools

Adult Behaviour Category										
Management of Time Category	TCHG	P/SA	NURT	CHMAN	SUP	TRNS	ROUT	PRSA	OTH/NI	TOTAL
GMOT	18	34		7	1		3			63
FMOT	7				3		1	1		12
DP	7	29		2	1		1			40
A&C	72	26	2	24	14	8	26	1		173
MUS		25		8						33
S/L	53	115	3	14	2	2	18			207
IRISH LANG	41	13	2	4	1		6			67
RDG	123	2	3	27	4	5	13			177
WRTG	110	32	1	21	16	5	20	1	1	207
N/M	102	45	5	19	8	4	21	1	1	206
PHYS										0
SOCS	11	6		2		1				20
OTH										0
RLG		19		6	3	2	9			39
MED		22			7	1	23	7		60
PERS	35	13	5	27	28	5	50	5	4	172
SOC										0
DISC										0
DOM	13	9	2	23	3	2	26		1	79
ECON										0
TRNS	12	2		11	1	1	26	1	3	57
WAIT	2	1		3			5			11
FREE	24	10	3	7	11	1	8	4		68
MIXED	77	96	1	19	6	7	49	2	1	258
OTHER/NI	43	9		14	7	3	13	1	41	131
TOTAL	750	508	27	238	116	47	318	24	52	2,080

Appendix 16:

Suggested minimum weekly time framework for the Primary School

Curriculum areas	One week [Full day]		One week [Short day, infants]	
Secular Instruction	Hours	Minutes	Hours	Minutes
Language				
L1	4	00	3	00
L2	3	30	2	30
Mathematics	3	00	2	15
SESE*	3	00	2	15
SPHE*	0	30	0	00
Physical Education	1	00	1	00
Arts Education	3	00	2	30
Discretionary curriculum time	2	00	1	00
Total secular instruction	**20**	**00**	**15**	**00**
Religious Education (typically)	2	30	2	30
Assembly time	1	40	1	40
Roll call	0	50	0	50
Breaks	0	50	0	50
Recreation (typically)	2	30	2	30
Total	**28**	**20**	**23**	**20**

From: Primary School Curriculum, Introduction (1999).