RESEARCH

Researching Effective Pedagogy in the Early Years

Iram Siraj-Blatchford*, Kathy Sylva, Stella Muttock*,
Rose Gilden, Danny Bell

*Institute of Education
University of London

Department of Educational Studies
University of Oxford

department for
education and skills
creating opportunity, releasing potential, achieving excellence

Research Report RR356

Research Report
No 356

Researching Effective Pedagogy in the Early Years

Iram Siraj-Blatchford*, Kathy Sylva, Stella Muttock*, Rose Gilden, Danny Bell

****Institute of Education***
University of London

Department of Educational Studies
University of Oxford

ISBN 1 84185 758 0
June 2002

Contents Page No.

List of figures

List of tables

List of appendices

Acknowledgements:
Thanks are due to the EPPE Team researchers, especially Brenda Taggart and Bet McCallum, and the Principal Investigators for sharing data from the project. We also appreciated and valued the support provided by the Steering Committee members of the *Effective Pedagogy in the Early Years* project, and in particular their comments and feedback on presentations and reports. We are grateful and indebted to the staff, parents and children from our 14 research settings for their co-operation and support. Thanks are also due to Angela Hobsbaum, Viv Moriarty and John Siraj-Blatchford for comments on parts of this report, and to Rebecca Goldman for her critical reading of earlier versions.

Note:
The work was commissioned by the then DfEE, which became DfES in the course of the research. Both DfEE and DfES are used in the report, since some early research 'instruments' of necessity incorporated the DfEE logo.

Glossary

Adult but child ex: (Adult initiates but child extends) is an observation category where the adult has initiated an activity but a child has extended it.

Adult throughout: is an observation category where the adult has initiated an activity and led it throughout.

As expected: (learning as expected) refers to a description of the target child's ability by their practitioner; i.e. the target child was deemed to be learning as expected.

CC: Combined centre; where care and education are integrated with some teacher input.

CGFS: *Curriculum guidance for the foundation stage* (QCA, 2000) for children from 3 years old to the end of reception year.

Child but adult ex: (Child initiates but adult extends) is an observation category where the child has initiated an activity but an adult has extended it.

Child throughout: is an observation category where the child has initiated the activity and led it throughout.

Co-construction: In the traditional constructivist account of learning new understandings are considered to be founded upon the child's prior understandings. In our analysis we emphasise the importance of recognising that learning encounters involve processes of co-construction where each party engages with the understanding of the other. A necessary condition for this to occur is that both parties are involved and that the content should be instructive (See below).

Conceptual knowledge: Refers to the ideas and understanding of principles and of their relationship to each other.

Creative: Refers to the *Creative development* area of the CGFS.

Critical moments: An event occurring during an observation which influenced and developed an idea or skill substantially; this may have come from a child, a practitioner, or a resource.

Curriculum differentiation: The provision of differentiated curriculum experiences as a response to the identification of the specific needs of individual or small groups of children (See 'formative assessment').

DC: Local Authority Day Care centre, normally with a Social Services history but most are now managed by local education authorities.

DfES: Department for Education and Skills, the UK central government department who commissioned the EPPE and EPEY research projects.

Direct teaching: These are pedagogical interactions referred to by the Target Child Observations which include simple questioning, description of the activity, didactic instruction, task management, reading to the target child, and organising and allocating tasks.

ECERS-E: (**Early Childhood Environment Rating Scale: Extension) Sylva, Siraj-Blatchford and Taggart (1998) University of London, Institute of Education:** A rating scale of 4 subscales which assesses pedagogy and the curriculum within the setting, including the areas of mathematics, science, literacy and diversity (whether staff plan to meet particular / individual needs).

ECERS-R (Early Childhood Environment Rating Scale: Revised) Harms et al (1998): A rating scale consisting of seven sub-scales which provide an overview of the pre-school environment, covering aspects of the setting from furnishing to individuality of care and the quality of social interactions.

EEC: *Early Excellence Centre* (as designated by the DfES); a centre which offers fully integrated care and education for pre-school children with other services for older children, families and practitioners.

EPPE: The *Effective Provision for Pre-school Education* project, a 'value-added' longitudinal research study of the effects of early childhood provision on the developmental progress of 3000+ children.

EPEY: The *Effective Pedagogy in the Early Years* project is the formal name of the research reported here.

Excellent settings: The group of 3 case-study settings (identified by EPPE) whose social or/and cognitive outcomes were excellent; i.e. where the children were found to make substantially more developmental progress than could be predicted by their family background and their pre-test assessments (see 'good settings').

Formative assessment: The process whereby information is collected to identify the extent of children's learning, and subsequently applied in the provision of feedback and in adapting the curriculum and pedagogy to provide for their particular needs.

Foundation Stage: a Stage of education for children from 3 years old to the end of reception class (see CGFS).

Good settings: The group of 9 (7 settings for the systematic observations) case-study settings whose outcomes were found to be good in some areas of social or cognitive development, but where the children largely made predictable progress according to their family background and their pre-test assessments (i.e. not 'excellent' see above).

High cognitive challenge: An overall qualitative judgement of how much the episode is 'stretching' the child's mind (see Appendix 7).

Intervals: The 30 second intervals which make up each 20 minute Target Child Observation.

Instruction/Instructive: The term 'instruction' has been applied to include both direct (demonstrating, questioning etc) and indirect instructional behaviours and intentions such as the encouragement of parental involvement and the provision of 'pedagogical framing'.

Involvement: The concept of involvement that we have applied has been adapted from the work of Ferre Laevers (1994) and Pascal and Bertram (1997). The term is applied to adults *and* children who have focused their attention upon a shared activity and are persistent. They are 'intrinsically motivated, rarely distracted, and appear fascinated and absorbed' (op cit) by their shared activity.

Iterative triangulation: A mixed methodology design was employed in the study and a process of iterative triangulation is described. This was employed to contribute to the internal validity of the study and to encourage a process of working; 'back and forth between inductive and deductive models of thinking'.

Knowledge: Refers to the *Knowledge and Understanding of the World* area of the CGFS.

Learning episodes: Coherent activities initiated either by children or adults.

Level 2-4: Practitioner qualification levels including NVQ level 2-4 and those which are equivalent to it.

Level 5: Practitioner with NVQ level 5 qualification or qualified teaching status.

Literacy: Refers to the *Communication, language and literacy* area of the CGFS.

Modelling: The process where early years educators provide a 'model' in terms of their language, behaviours, skills and/or attitudes for young children to imitate.

Maths: Refers to the Mathematical development area of the CGFS.

Monitoring: These are pedagogical interactions referred to by the Target Child Observations which include the practitioner observing the target child, and when the practitioner was available to the target child in their social context but not interacting with them.

Nodes: act as 'containers' in NVivo for categories and coding of the qualitative data e.g. in the coding of a transcript of an interview.

NC: Nursery Class, normally attached to a primary school and where children aged 3 and 4 attend half-day nursery education.

NS: Nursery School, whole schools catering for children 3-5 years old.

Outcomes: In this report they are referred to in respect to how much developmental progress the children in the EPPE case-study settings made which cannot be explained by background characteristics.

PDN: Private Day Nursery.

Pair: refers to a child pair, rather than an adult and child which is 1:1 (see the last entry in the glossary).

Pedagogy: Pedagogy: The practice (or the art, the science or the craft) of teaching. See page 27 for a more detailed discussion.

Pedagogical content knowledge: Different pedagogic techniques are often required to make different forms of knowledge, skill and understanding accessible to young children. In teacher education the identification of appropriate strategies is often referred to as 'pedagogical content knowledge'. Requires knowledge of the 'subject' being taught and the child's level of learning.

Pedagogical interactions: Face to face interactions practitioners engage in with children; they may take the form of cognitive or social interactions (see figure 5).

Pedagogical framing: Is the 'behind-the-scenes' work that practitioners do with regards to provision of *materials, arrangement of space*, and the establishment of *daily routines* to support learning through (e.gs.) exploration, cooperation and the equitable use of resources.

Pedagogical strategies: practices which support learning, for instance, social interactions, assessment, the organisation of resources or management.

PG: Playgroup; a form of pre-school provision for children (2 ½ years and above), historically associated with the voluntary sector. Usually run by parents.

Physical Development: Refers to the *Physical development* area of the CGFS.

Procedural knowledge: Knowing about the things in the world, and how to act upon them.

PSE: Refers to the *Personal, social and emotional* area of the CGFS.

QSR N-Vivo: computer software programme used to code and analyse qualitative data using a node (see glossary above) structure to support the organisation, categorisation, shaping, and linking of the data.

Reception/RC: refers to the 2 Reception classes which were part of the case-study sample. In the UK, more than 90% of children enter the Reception class of a Primary (Elementary) School aged 4.

Setting: the term refers to local authority day nurseries, playgroups, nursery classes, nursery schools, combined centres, reception classes, early excellence centres and private day nurseries.

Small group: Code from Target Child Observation system referring to a group of between 3-8 children.

Struggling: refers to a description of the target child's ability by their practitioner; where the target child was deemed to be a struggling learner.

Sustained shared thinking: An episode in which two or more individuals "work together" in an intellectual way to solve a problem, clarify a concept, evaluate activities, extend a narrative etc. Both parties must contribute to the thinking and it must develop and extend.

Systematic observations: Analysis from the timed *Target Child Observations*.

V capable: refers to a description of the target child's ability by their practitioner; where the target child was deemed to be a very capable learner.

Target Child: focal child being observed during the timed *Target Child Observations*.

TCO: *Target Child Observation* instrument (Sylva, Roy and Painter,1980). A timed systematic observation instrument used to look at children's experiences of the classroom.

Whole class: Code from Target Child Observation system referring to a group of 9 or more children.

ZAD (zone of actual development): Refers to the cognitive levels at which a child is currently operating.

ZPD (zone of proximal development): Refers to the higher cognitive levels which a child can achieve when supported by a practitioner or more knowledgeable other (the cognitive potential).

1:1: One to one referring to a one adult and one child.

Introduction

This report presents the analysis of the Effective Pedagogy in the Early Years (EPEY) Project. A condensed account of our conclusions is included in the Executive Summary below. In the interests of clarity and ease of presentation the main body of the report begins with detail of the methodology that was employed in the study and by a critical review of the literature with an account of the questions that were addressed. This is followed by an extended discussion and analysis of our findings. It should be understood that a good deal of the literature review, and the elaboration of our research questions and arguments were constructed in the process of our data collection and analysis. The linear structure of the presentation should therefore not be taken to represent the chronological sequence that the study followed. In particular it should not be assumed that all of our questions arose directly from our review of the literature. The process was rather an iterative one where our field observations stimulated an engagement with the literature just as often as the reverse. The project is based on research into centres for which we have robust child developmental outcome data provided by the 5 year longitudinal Effective Provision for Pre-school Education (EPPE) Project (DfES funded).

All of the centres that we base our evidence on in this report can be described as providers of good practice to children and families. Of the 14 settings some are excellent and highly effective, most have good to excellent child outcomes across the board, none have an ineffective profile on the social and behavioural outcomes in EPPE. A minority have 1 or 2 low outcomes on the four reported cognitive assessments in EPPE. Two of these 14 case study settings are reception classes, selected for the EPEY study and chosen on the basis of professional judgement as providers of 'good' practice.

The study engages with staff pedagogy in all types of Foundation Stage settings and the impact on children's learning as a consequence of this pedagogy. Childminding is an important provision, and so we attempted to explore the practice of childminders in this study. However we had no child outcome data for these providers; they were selected, like the two reception classes, on the basis of local professional judgement as effective providers. Childminders' perceptions of their practice and the impact of the *Curriculum guidance for the foundation stage* (QCA, 2000) are thus reported separately at the end of the study on the basis of telephone interviews with 46 childminders from 4 regions in England.

Part 1 *Executive Summary*

The Effective Pedagogy in the Early Years (EPEY) study was developed to identify the most effective pedagogical strategies that are applied in the Foundation Stage to support the development of young children's skills, knowledge and attitudes, and ensure they make a good start at school. The term *Pedagogy* is applied here to refer to the instructional techniques and strategies which enable learning to take place. It refers to the interactive process between teacher and learner, and it is also applied to include the provision of some aspects of the learning environment (including the concrete learning environment, and the actions of the family and community - see 3.4 below).

The EPEY study was largely based on intensive case studies conducted in 'effective' Foundation Stage settings reflecting all types of provision. Twelve of the settings were chosen on the basis of child social/behavioural and cognitive outcomes from the *Effective Provision of Pre-school Education* (EPPE) project as 'good' practice settings. Two reception classes, and 46 'effective' childminders were identified according to the professional judgement of local authority experts from 4 of the 5 EPPE project regions. Careful, detailed case studies were conducted in each setting which involved detailed documentation of naturalistic observations of staff pedagogy, and systematic structured observations of children's learning. Information was also gathered and analysed using interviews with parents, staff and managers and through intensive and wide ranging documentary analysis and a literature review of pedagogy in the early years. Further information was collected from the 46 childminders using telephone interviews to identify the impact of the *Curriculum guidance for the foundation stage* (CGFS) on their practice.

For most practitioners the declared priorities in the early years are on the development of positive dispositions to learning, self-confidence and independence. Staff and parents normally give priority to social development, but our evidence suggests that those settings which see cognitive and social development as complementary achieve the best profile in terms of child outcomes.

Our analysis has also gone a long way to provide explanations for the statistical relationships which were found in the EPPE (Effective Provision of Pre-school Education) project data analysis. Four areas of impact were identified for special attention. Our close analysis of the relevant EPPE research instruments (e.g. the Early Childhood Environment Rating Scale) suggested that we needed to investigate each of the following practices further, to identify how some practitioners supported the children in making greater developmental progress than others in less effective centres:

- adult-child verbal interactions;
- differentiation and formative assessment;
- parental partnership and the home education environment;
- discipline and adult support in talking through conflicts.

Adult-child verbal interactions
If learning comes from a process of cognitive construction that is only achieved when the child is motivated and involved, we have argued that it is entirely consistent to treat the part played by the effective educator in the same way. The cognitive construction in this case is mutual, where each party engages with the understanding of the other and learning is achieved through a process of reflexive 'co-construction'. A necessary condition is that both parties are *involved*, and, for the resultant learning to be worthwhile, that the content should be in some way *instructive*. Our analyses of the qualitative and quantitative data have substantiated this model and our research has also shown that adult-child interactions that involve some element of 'sustained shared thinking' or what Bruner has termed 'joint involvement episodes' may be especially valuable in terms of children's learning.

We found that the most effective settings encourage 'sustained shared thinking' but we also found that this does not happen very frequently. As a group, in excellent settings there were significantly

more ‘sustained shared thinking’ interactions occurring between staff and children, than in the ‘good’ settings. When it does occur, it has been shown to extend children’s thinking. Our investigations of adult-child interaction have led us to view that periods of ‘sustained shared thinking’ are a necessary pre-requisite for the most effective early years settings, especially where this is also encouraged in the home through parent support. Parent interview data suggest that in some of our very middle class case study settings (notably the private day nurseries), it is less the staff’s interventions and more the parents’ pro-active behaviour towards their children’s learning in the embedded, cultural context of the home, that has provided a good basis for sustained shared thinking. The analysis has shown that practitioners’ knowledge and understanding of the particular curriculum area that is being addressed are vital as well. A good grasp of the appropriate ‘pedagogical content knowledge’ is a vital component of pedagogy and it is shown to be just as important in the early years as at any later stage of education. The research found that, even in these effective settings, there were examples of inadequate knowledge and understanding of curriculum areas, especially in the teaching of phonics.

In the most effective (excellent) settings the importance of staff members extending child-initiated interactions is also clearly identified. In fact, almost half of all of the child-initiated episodes which contained intellectual challenge, included interventions from a staff member to extend the child’s thinking. The evidence also suggests that adult ‘modelling’ is often combined with sustained periods of shared thinking, and that open-ended questioning is also associated with better cognitive achievement. However, open-ended questions made up only 5.1% of the questioning used in even these ‘effective’ settings.

In the excellent and good settings the balance of who initiated the activities, staff or child, were very equal, revealing that the pedagogy of these effective settings encourages children to initiate activities as often as the staff. The children in reception classes experienced a different balance of initiated activities, with a much greater emphasis upon staff initiated episodes.

We have found that qualified staff in the most effective settings provide children with more experience of academic activities (especially literacy and mathematics) and they encourage children to engage in activities with higher cognitive challenge. While we found that the most highly qualified staff also provided the most direct teaching, we found that they were the most effective in their interactions with the children, using the most sustained shared thinking interactions. Further, we found that less qualified staff are significantly better pedagogues when they are supervised by qualified teachers.

Differentiation and formative assessment
Our teacher observations suggest an association between curriculum differentiation, formative assessment, and curriculum matching in terms of cognitive challenge, and ‘sustained shared thinking'. The interviews, teacher observations and documentary evidence suggest that the better the setting does on each of these dimensions of good pedagogic practice, the more effective it will be in supporting children’s cognitive progress. The evidence thus confirms the importance of formative assessment to meet children’s particular needs, particularly formative feedback *during* activities.

In the most effective settings, child-related information, especially about curriculum and learning aims, was most frequently shared between parents and staff, and the parents were often involved in decision making about their child’s learning programme.

Parental Partnership
While the data that we collected have shown a clear association between children’s cognitive and social outcomes and the pedagogic principles that are identified above, the evidence has also shown us that some private settings were effective even where these pedagogic principles were not always applied. Our findings suggest that where a special relationship in terms of shared educational aims has been developed with parents, and pedagogic efforts are made at home to support the children, good developmental outcomes may be achieved even in the absence of

consistently good pedagogic practice. However, in more disadvantaged areas, staff in effective settings had to be proactive in influencing and supporting parents' role in developing the home education environment to support children's learning. Only supporting the parents' needs or involving them as helpers did not appear to influence children's developmental progress.

Discipline and adult support in talking through conflicts
We believe that the research evidence linking early childhood social and behavioural outcomes with certain pedagogic practices is compelling. We therefore argue that direct teaching should be complemented by dialogues between children and adults which centre on sustained shared thinking. There should be a more equal emphasis on free play and direct learning.

We have found that the most effective settings also adopted discipline/behaviour policies in which staff supported children in being assertive, at the same time as *rationalising and talking* through their conflicts. Staff who were consistent and pro-active in supporting the children in developing their social skills through e.g. using 'story books and group discussions to work through common conflicts' had better social/behavioural developmental outcomes. The most effective settings in this respect also had clear discipline and behaviour policies which prioritised talking through conflicts. In settings which are less effective in this respect our observations have shown that there was often no follow up on children's misbehaviour. On many occasions, children were 'distracted' from interfering with other children, or simply instructed to stop.

Organisation
Three major approaches to early education were identified in a review of the literature:
- The teacher-directed, programmed learning approach.
- An open framework approach where children are provided with 'free' access to a range of instructive learning environments in which adults support children's learning.
- A child-centred approach where the adults aim is to provide a stimulating yet open-ended environment for children to play within.

We argue that effective pedagogy in the early years involves a balance of the first two approaches, both the kind of interaction traditionally associated with the term 'teaching', and also the provision of instructive learning environments and routines. We argue that where young children have freely chosen to play within an instructive learning environment, adult interventions may be especially effective. However, we have also noted that these interactions are not as frequent as they should be – even in settings we have classified as "effective" on the basis of child outcomes.

In all of the case study settings we found that the children spent most of their time in small groups. But our observations show that 'sustained shared thinking' was most likely to occur when children were interacting 1:1 with an adult or with a single peer partner. Freely chosen play activities often provide the best opportunities for adults to extend children's thinking. It may be that extending child-initiated play, coupled with the provision of teacher initiated group work, are the main vehicles for learning.

The case study analysis has shown that excellent, and good settings, tend to achieve an equal balance between adult-led and child-initiated interactions. However, in the excellent settings adults extended about half the child-initiated activities, while in the good settings they did this less often. Thus we have found that the most effective settings therefore combine the provision of open-framework, free play opportunities with more focused group work involving some direct instruction. The evidence also suggests that the achievements of settings against the cognitive outcomes appear to be directly related to the quantity and quality of the teacher/adult planned and initiated focused group work that is provided. Our findings suggest that the most effective settings provide both, and achieve a balance between the opportunities provided for children to benefit from teacher initiated group work and the provision of freely chosen yet potentially instructive play activities.

The reception classes differed from the pre-school settings in a number of important ways. They had a different curriculum balance, the children spent much more time in larger groups and the learning episodes that we observed were most often teacher initiated. Reception classes had much more literacy, mathematics and physical development and the least personal and social education (PSE) compared to the pre-schools. This may be especially significant as we found that more of a child's time was devoted to literacy, mathematics and physical development activities in the most effective pre-school centres. Children in the good, but not excellent, case study settings, spent more time in creative and knowledge and understanding of the world activities. Physical development and PSE, however, were given approximately equal attention in all of the settings. The majority of episodes occurring in reception classes were initiated by adults, and the episodes of high intellectual challenge to the child occurred in teacher initiated episodes, a very different approach to that of the pre-school settings.

The *Curriculum guidance for the foundation stage* (CGFS) and transition into school

Our research findings support the general approach taken in the *Curriculum guidance for the foundation stage* (QCA, 2000) where the emphasis is upon an 'emergent', 'cognitively orientated' approach to learning. Effective practitioners assess the children's performance to ensure the provision of challenging yet achievable experiences, they model appropriate language, values and practices, they encourage socio-dramatic play, they also praise and encourage, ask questions and interact verbally with the children to encourage sustained shared thinking (SST).

Most of our respondents reported that they endorsed the content of the CGFS, but some settings had clearly found the new initiative stressful. In several of the settings where respondents reported little change in their practices, it was felt that the standard of provision that was suggested by the CGFS fell below their prior or current practice. However, it is clear that in many other cases the CGFS is only partially being applied and in most cases this may be simply because the settings current practices are considered more appropriate.

Despite these responses it may be that many of the changes brought about by the CGFS are under-reported. In one setting we were informed of significant changes in the staffing responsibilities and in another of a raised awareness of special educational needs. Even where the respondents felt there was little impact upon their curriculum or pedagogy, many reported changes in their assessments.

The training programmes providing curriculum knowledge based on the *Curriculum guidance for the foundation stage* (CGFS) had not yet made a major impact on the practice of the effective childminders in this study, and many of these childminders regard the *Early Learning Goals* (ELGs) as too formal.

The case studies have shown how the curriculum is currently being differentiated according to age. Children who are younger, and those children considered to have learning delay, experienced more PSE and also more creative development; while children who are older (and in Reception) experienced more literacy and mathematics and less PSE. The curriculum was also differentiated between excellent and good settings, with children in the most effective settings experiencing a greater proportion of literacy, maths and physical development activities. This makes the most effective settings more like good Reception Classes in their core curricular balance. The only difference being that excellent settings had the highest proportion of PSE. However, the emphasis in the most effective centres on literacy, mathematics, physical development and PSE left less time for creative activities and knowledge and understanding of the world when compared to other provisions.

Our survey shows that the single element of the CGFS considered most popular by practitioners in this study has been its emphasis on continuity into the primary school. A significant degree of pleasure was expressed by some pre-school respondents regarding the positive impact that the CGFS was having on reception classes. The Foundation Stage has clearly improved the relationship between pre-schools and school; but our study shows that there are still major

concerns. The issues relate to transition from the nursery to the school reception class and also at the end of reception, from the foundation stage to year 1 of the National Curriculum.

For the majority of case study settings, the practice of introducing the children to more formal organisational structures such as carpet and circle time activities (large group activities) was considered of more importance than any specific curriculum work. Most made provision for transition by attempting to make children more familiar with school (through visits etc) and/or by making the nursery practice a little more like school in the latter months (whole class activities, etc).

Many of our respondents were critical of the common practice of schools taking one intake in the year rather than taking children into reception classes throughout the year. The extent to which chronological age cannot be taken to indicate young children's development was also stressed by one of the reception class teachers.

Information and Communications Technology (ICT)
Generally speaking, pedagogical practice in terms of the ICT curriculum was found to be relatively limited at this time. All but one of the case study settings was found to be equipped with at least one computer that was available for the children's use every day. Unfortunately the computers were used in a limited way, predominantly in supporting creative development, and by programmes that were chosen to encourage the acquisition of literacy skills.

While many respondents recognised the part to be played by cassette recorders, telephones, scanners, and digital cameras we found little evidence of settings using programmable toys, and the integration of work on the computer screen with activities off the screen. The most innovative work that was recorded involved the use of digital cameras and of scanners, but many early years practitioners in this study lacked confidence in the area. While some references were made to the value of the computer in supporting number and language and literacy, and frequent references were made to the children's on-screen painting, few practitioners were using the equipment to achieve specific CGFS Early Learning Goals.

The children tended to work at the computer in groups of 2-4 and the adults tended to help them access software and supported them when they get into difficulties. However, the children spent most of their time at the computer without an adult present. When an adult was present the adult was usually a qualified teacher but in very few cases did we observe extended support. The children were often left to develop computing skills independently, with the adult rarely questioning, instructing, engaging or guiding. Staff rarely engaged in scaffolding or interactions which encouraged sustained shared thinking during children's computing activities, suggesting a very skills-based and technical approach.

Training
In the most effective settings the qualified teachers and NVQ level 2-4 staff members spent the greatest proportion of their time working with children on literacy activities. Teachers also devoted a high proportion of their time with children to mathematics activities. Untrained adults spent the majority of their time working with children in the area of creative development. We found in both interviews and observations that trained teachers used the most sophisticated pedagogy, including shared sustained thinking. When less qualified staff were working with qualified teachers we found significantly more sustained shared thinking interactions than when they worked alone or with other less qualified staff.

Our study shows that early years staff may need support in developing their pedagogical content knowledge in the domains of the Early Learning Goals.

'Effective' Childminders
Our findings suggest that the present training provision for childminders may be having a positive effect. It would seem to have provided an increased awareness and understanding of a range of

relevant issues and has resulted in increased status, higher levels of security and self-esteem. As a result childminders feel better equipped to develop more professional relationships with parents.

Despite these improvements, this study suggests the training programmes geared towards implementing the Curriculum guidance for the foundation stage (CGFS) have yet to make a major impact on the general practice of even these 'effective' childminders. Over a quarter (26%) of those surveyed said they had no knowledge of the initiative. This is surprising as the sample was especially chosen to represent those identified as offering higher quality provision. Those who responded positively to the CGFS indicate a higher level of awareness of children's learning with some evidence of providing higher quality educational provision. However, some childminders regarded the Early Learning Goals (ELGs) as too formal and although they may still be influenced by them, they felt that full implementation was not suitable for their settings.

Whatever the level of training received, the childminders in this study felt confident that play (however they defined it) was central to learning for children in the Foundation Stage and this featured as a constant in their daily and weekly routines. Many also felt that children learn best from being supported while pursuing their own interests.

Formal and informal networks which offer both personal and professional support were important in the lives of the interviewed childminders irrespective of where they lived.

The relationships between the childminders and parents in our survey appear to have been exceptionally good. Although many childminders valued the personal relationships that may develop between childminders and parents there was a clear sense of professionalism in the way that they deal and make contracts with parents. It may be that the formation and development of the National Childminding Association (NCMA) should take some credit in this positive outcome.

It would seem that further examination of the interactions between childminders and their children, particularly the extent to which modelling and scaffolding occurs, would be useful in assessing aspects of pedagogical understanding amongst childminders, and this would have implications for future childminder training programmes.

Any review that is planned for childminding training programmes might consider input that examines the ways in which the children who are 'minded' react and adapt to the childminder setting and the relationships that underpin the childminder/parent contract, especially over the sensitive issues of values, attitudes, expectations and behaviour. There is also a need for more research to study more closely the practices of the full range of childminders.

Parents and the home learning environment

A total of 107 parents were interviewed from the 14 case study settings and each of the settings encouraged the parents to read with their children. While previous studies have shown that involvement in *learning activities at home* and parent involvement in *decision making, leadership, and governance* are often associated with better academic achievement (Epstein 1991), our findings show that it is the *involvement in learning activities at home* that is more closely associated with better cognitive attainment in the early years. The settings that encouraged continuity of learning between the setting and the home achieved consistently better cognitive outcomes. Whether parents and/or children are tuned into what the setting is trying to achieve seems to be linked, at least partially, with what happens at home. It appears to be associated with what the parents do with their children when they are not at the setting or what the children initiate with their parents.

Part 2 *Context and methodology*

The Effective Pedagogy study draws upon the findings of Project EPPE (Effective Provision of Pre-school Education) to identify the pedagogical strategies which in the Foundation Stage support the development of the skills, knowledge and attitudes that enable children to make a good start at school. Twelve settings, which use effective pedagogy, had been identified by the EPPE team through their measured impact on academic, social and dispositional learning. Case studies, systematic observations, interviews and focus group discussions have been used in this report to document effective pedagogical practices and to illustrate their use across a variety of Early Childhood settings, in addition two reception classes were identified for similar case study.

The Effective Pedagogy in the Early Years project therefore aimed to:

- Draw upon and extend the analysis of case studies conducted in the twelve EPPE pre-school settings within a range of effective outcomes and pedagogical strategies.
- Extend the analysis further with the inclusion of 2 good reception classes (identified on the basis of professional judgement). The total sample therefore consisted of 14 Foundation Stage settings:
    - 1 Playgroup
    - 1 Local Authority day nursery/combined centre
    - 3 Private day nurseries
    - 2 Nursery schools run by the LEA
    - 3 Nursery classes in primary schools
    - 2 Early Excellence Centres/Combined Centres
    - 2 Reception classes
- Document the characteristics and practices within the pedagogical strategies.
- Collaborate with practitioners from a variety of settings through focus groups to adapt and implement the strategies in local settings and with different providers.

The study provides new research evidence while drawing upon existing EPPE research. The research methods that were applied in the EPEY study included:

- Review of the international literature on pedagogy
- Survey of 46 childminders
- Longitudinal study of child outcomes from EPPE - drawn from EPPE (see EPPE Technical Reports)
- Case studies of 14 good/effective settings including reception classes
- Systematic observations of children within 12 of the 14 good/effective settings
- Focus Group Discussions with user groups

2.1 The EPPE design

Project EPPE is a longitudinal national research study which follows the developmental progress of more than 3,000 children across England. Children and their families are recruited into the study when they are 3+ years, the age at which many enter their first Foundation Stage group setting. (For those who are already enrolled in a group setting, they enter the *study* at age 3+ while continuing in their attendance in a setting.) Developmental progress is assessed regularly, beginning when children enter the study and continuing through school entry, the end of Year 1 and also at the end of Year 2 in national assessments. After controlling for family background and child factors such as gender and health, the educational and care factors associated with children's progress is revealed. The full design of EPPE is explained in EPPE Technical Paper 1 (Sylva et al 1999). Both qualitative and quantitative methods (including multilevel modelling) are used to explore the relationship between the quality of individual pre-school settings and children's intellectual attainment and social/behavioural development at entry to school.

EPPE is a study that identifies the 'value added' to children's developmental progress by the form of Early Childhood provision that they have experienced. In addition to controlling for the child's developmental level at entry to pre-school, EPPE controls for the influence of the family and child

characteristics when establishing the 'effectiveness' of each setting in its sample. Thus, one of the main questions in EPPE is:

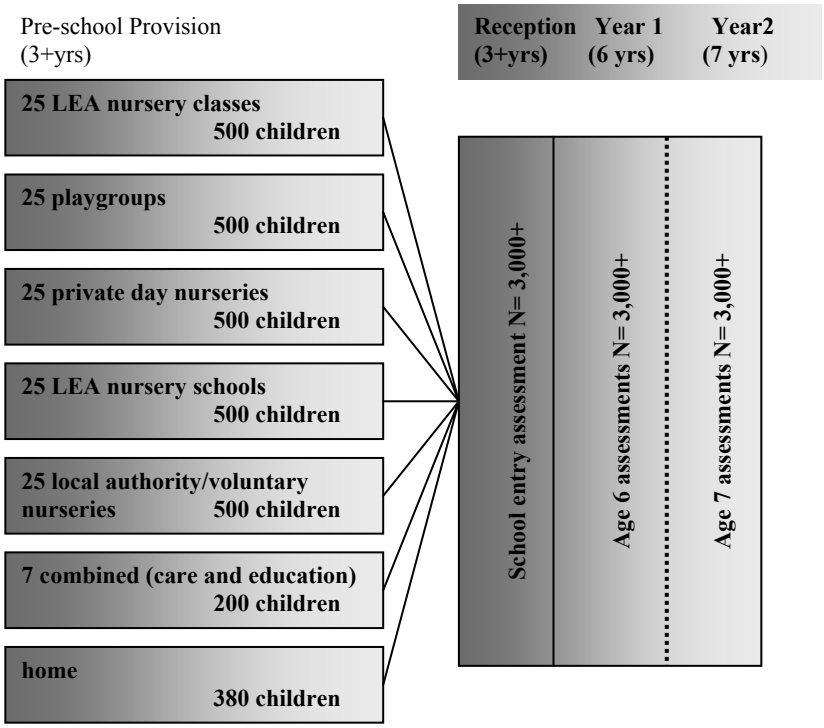
Which are the centres where children make more developmental progress than would be predicted by their assessments at entry to pre-school?

A total of 141 centres were included in the main EPPE study which selected a random sample of the six main forms of provision in five regions in England to include provision in urban, suburban and rural areas with a range of ethnic diversity and social disadvantage.

We aimed for 20-25 children to be randomly sampled in each pre-school centre when they entered and their progress was followed to the end of Key Stage 1 in order to demonstrate 'analysis centre', effects in the multi-level analysis. The school entry data (when the children entered reception class) was analysed to identify the 'pre-school centre effects' through multi-level analysis, and a sample of twelve settings ranging from average, with some good practice, to very effective practice were selected for case study analysis. The centres were selected on the basis of their scores in children's developmental progress in:

Cognitive Outcomes	**Social/behavioural outcomes**
Pre-reading	Independence and concentration
Non-verbal	Cooperation and conformity
Language	Less anti-social, worried and upset
Number concepts	Peer sociability

Figure 1: The EPPE design.



A 'centre profile' was created for each centre through systematic observation and questions to staff. The Early Childhood Environment Rating Scale: Revised (ECERS-R) (Harms *et al* 1998) was used in drawing up each centre's environmental quality profile along with an extension to this scale based on the Early Learning Goals and what we know about how children learn (ECERS-English Extension or ECERS-E). The ECERS-R rating scale consists of seven sub-scales which provide an overview of the pre-school environment, covering aspects of the setting from furnishing

to individuality of care and the quality of social interactions. The ECERS-E describes the curriculum within the pre-school, and includes the areas of mathematics, science, literacy and diversity (whether staff plan to meet individual/particular needs). Each sub-scale is comprised of a range of items describing the 'quality' of the specific type of provision. Each item was rated 1 (inadequate) to 7 (excellent). The ECERS-R and ECERS-E are one approach to describing the 'processes' through which children are cared for and educated (see EPPE Technical paper 6, Sylva et al 1999, for full details.) An ICT subscale was developed at a later date for another project (see appendix 9 Siraj-Blatchford J and I. 2000) and used in our case studies, along with the child observations, to ascertain the quality of ICT provision in the settings.

2.2 Intensive case studies: sample and data collection

All 12 EPPE case study settings are providers of good to excellent practice which boosts children's development much more than could be expected by their scores at age 3 (and entry to study). Figure 2 reflects all the case study centres, we have not provided our precise details to ensure anonymity of the settings.

Researchers on the EPPE project who had been visiting the centres for 1-3 years to conduct child assessments and ECERS ratings for EPPE were trained in qualitative data collection. To some extent they were introduced to certain aspects of qualitative data analysis. They received intensive training to conduct naturalistic observations, to engage in semi-structured interviewing and to collect and analyse documents. Each researcher was familiar with the 14 centres under study (2 reception classes were added), some had made up to 40 visits to their case study centre during the EPPE assessment period, and each researcher spent two whole weeks in each of the following settings collecting qualitative data.

Figure 2 - Profile of centres selected for in-depth case studies

Centre No.	Type of Provision	No. on roll	Some Under 3
017	NC	approx. 50	-
106	NC	approx. 40	-
214	DC (CC)	approx. 60	yes
219	PDN	approx. 50	yes
225	CC (EEC)	approx. 120	yes
306	PDN	approx. 90	yes
324	NS	approx. 120	-
401	PG	approx. 40	-
413	PDN	approx. 120	yes
417	NC	approx. 50	-
421	NS	approx. 100	-
426	CC (EEC)	approx. 200	yes

Code		*No of centres in study*
CC EEC	Combined Centres also } Early Excellence Centre}	2

DC	Local Authority Day Care – also CC	1
NC	Nursery Class	3
NS	Nursery School	2
PG	Playgroup	1
PDN	Private Day Nursery	3
RC	Reception classes (501 and 502)	2
Total		***14***

Since the EPPE children had left the centres by the time of the case studies, we needed to adopt criteria for the selection of Centres to ensure that they had not changed drastically. All centres were selected for case study after we had reassured ourselves that:

a) No significant change in management had taken place (same manager/deputy and senior management team) since EPPE.
b) A similar or better score in ECERS-E (which had shown a significant correlation with child outcomes) as in EPPE.
c) No difficult circumstances (e.g. pending/recent OfSTED).
d) Selection of good (in some aspect/s) to excellent centres related to children's outcomes ('blind' – selected by the member of the central team not involved in the fieldwork or analysis).
e) As balanced a range of providers as possible.

The last criterion was difficult, although we found effective and less effective settings in all types of pre-school provision, in some types there were very few centres in the top range. The day care centre and the playgroup reflect the top range of their provision, hence we had very few to choose from and there is only one of each in our sample of the 12 EPPE case study centres (see Sammons *et al* Technical Paper 8, forthcoming).

The qualitative data was transcribed, 'cleaned' i.e. anonymised, and then entered into QSR N-Vivo (explained below in this report), to aid the coding and data reduction. The N-Vivo database includes (see Figure 3):

14 files of documentary analysis, one on each case study centre (a detailed narrative description);
42 transcripts of staff and manager interviews;
204 (approx 400 hrs. of) naturalistic observations of 2 practitioners for two days and selected vignettes and 'critical incidents' observed over a 2 week period - for each centre;
107 parent interviews and
14 centre plans of the inside and outdoor learning and play environment.

The analysis focuses on patterns of good practice across the centres but particularly at what makes some centres more successful at achieving good outcomes, for example, for numeracy, social development or language development. The intensive case study analyses attempt to tease out the specific pedagogical and other practices that are associated with achieving very effective outcomes as compared to those centres with good or more average practice. In particular the case studies aim to investigate the processes which might explain the patterns of child outcomes in the EPPE study (see EPPE Technical Papers 2, 4, 6 1999; 7, 2000 and 8 forthcoming).

Figure 3 - *Data entered into QSR NUD*IST - vivo*

Centre Number	Documentary analysis	Staff interviews	Teacher observations	Other observations	Parent interviews	Centre plan
017	1	3	8 (22:30)	11	08	1
106	1	3	8 (18:55)	6	08	1
214	1	4	9 (30:45)	6	09	1
219	1	2	10 (27:35)	6	10	1
225	1	3	8 (22:20)	7	07	1
306	1	2	4 (10:20)	7	05	1
324	1	4	8 (17:06)	4	08	1
401	1	2	10 (28:21)	3	06	1
413	1	3	9 (11:44)	0	09	1
417	1	2	8 (25:05)	6	08	1
421	1	4	8 (30:40)	12	09	1
426	1	4	10 (23:28)	8	08	1
501	1	4	8 (21:25)	4	06	1
502	1	2	8 (20:20)	8	06	1
Total	**14**	**42**	**116 (300+hrs)**	**88 (100+hrs)**	**107**	**14**

14 files of documentary analysis, 42 staff and manager interviews, 204 transcribed naturalistic observations of staff (400+hrs), 107 parent interviews and 14 centre plans

Total = 381 files 1 million word + data set

2.3 Managing data reduction using QSR NUD*IST – vivo (NVivo)

Qualitative data like interview transcripts and observation notes are notoriously difficult to manage especially in a project of this size. Data reduction can become a 'nightmare' unless it is well organized and structured to allow for ease of coding and theory building/testing. NUDIST (non-numerical unstructured data indexing, searching and theory building) has been widely used by qualitative researchers to manage small and large data sets. NVivo is a more recently developed sister product which, while based on earlier versions of NUDIST, has proven itself simpler to use and more efficient for the purposes of analysis (Bazeley and Richards, 2000). Software such as NVivo and NUDIST allow the researcher to develop an advanced organizing system that becomes the main tool for organizing and analyzing the data (Tesch, 1990). Exploring, viewing and coding documents are made much easier.

NVivo allows the researcher to model her preliminary ideas. In the case of this study, these were taken from a broad reading of the literature on effective practice in the early years (curriculum and pedagogy in particular), and models were created of 'components' of particular, key indexing categories. For instance, in our analysis of pedagogy we used the NVivo modeler to create a rudimentary cognitive *involvement* model using 'nodes'. From our knowledge of other aspects of pedagogy e.g. instruction, co-construction etc. we modeled these nodes and, from an early stage, we were able to suggest how they might relate to each other. In these initial analyses, through coding transcripts, we gradually amend our models and nodes using *anticipatory* and procedural *data reduction* techniques (Miles and Huberman 1994), and theory building. This is undertaken through the iterative process of coding the documents and refining the node definitions and structures ('trees') as we sift through the data (back and forth), adding new nodes as well as taking away those which are not evident in the data.

The NVivo software package allows us to create attributes for files e.g. for gender, qualification or type of provider. These attributes together with the nodes support the process of analysis further. For example, in our analysis of the 107 parent interviews from the 14 settings we created several nodes to code the text e.g. of how parents choose a centre, what they think makes a centre effective and what educational activities are undertaken in the home and who initiated these. Drawing out all our responses from the 107 parents on home education, there appeared to be some fundamental differences between parents of children at private day nurseries (PDN) and the 'others'. It was simple to separate the PDN parents, and the other 'types', using our attributes and nodes to create new files and compare the responses. We report on this finding later.

Once the 'nodes', 'trees' and 'sets' are established further searches can be made to explore the data. For instance, if we developed a particular interest in the relationship between a particular teaching technique (of instruction); (e.g. demonstration, questioning or modelling) within a particular area of the curriculum (e.g. creativity, language, maths etc.) then we could at any time separate and explore the relevant documents to create new data sets. These new sets then provide a means of exploring any links that existed between these categories further. The permutations of analysis and for the modification and creation of data sets, are potentially, vast. However, the main areas for analysis are ultimately determined by the researcher and not the software package!

Qualitative analysis is an iterative and constructive process which involves developing 'hunches' or hypotheses and going back to interrogate the data to confirm or contradict them. From the quantitative findings of the EPPE study we wanted to

explore the associations between the outcome findings and the practices that we had documented (see findings later in the report).

2.4 Case-study Interviews and observations

During the EPPE research we had interviewed the 12 managers of the settings. These were informal semi-structured interviews aimed at mopping up any anomalies found between our observations of staff pedagogy and our documentary analysis. As part of the Effective Pedagogy project we devised several new semi-structured interview schedules in an attempt to explore how the CGFS had influenced the practice of the centres and staff we had studied under EPPE. We also asked specifically about ICT and parent involvement.

A staff and manager interview were constructed and piloted (see appendices 1 and 2) and a face-to-face interview lasting up to one and a half hours was conducted with the manager and staff (normally those staff we had observed in the EPPE study) of each setting, a total of 30. In addition to this we analysed the 107 parent interviews (see appendix 4). All these interviews were transcribed and added to our NVivo database, coded and analysed. Some aspects of the interviews were analysed using regular data reduction techniques e.g. the examples of routines and how the day was structured, the data for these two aspects was very diverse. Our 400 hours plus naturalistic observations were analysed for pedagogical content.

An instrument developed in research conducted for the IBM KidSmart initiative and the Developmentally Appropriate Technology in Early Childhood (DATEC) project was used to evaluate the overall standard of ICT provision in the case study settings (Siraj-Blatchford, J. & I. 2001a/b). This ICT subscale (see appendix 9) was developed to be used in conjunction with the Early Childhood Environment Rating Scale: Extension (ECERS-E Sylva et al). The instrument provides a rating of the quality of the early years ICT environment as well as the resources and the provision offered. The ICT subscale covers three items that reflect the provisions of the Foundation Stage curriculum applied in England and Wales. These are:

- Information handling and communication skills
- Access and control of ICT tools
- Learning about the uses of ICT

Each one of the three items includes examples that describe the ICT provision, and others related to equipment, facilities, pedagogy and social interactions. In common with the other ECERS a seven-point scale is applied to indicate a range of practices and provisions that are considered inadequate (Level 1) to excellent (Level 7). A level 5 rating represents the kind of 'good' practice that may be expected to fully satisfy the requirements of the Foundation Stage curriculum and Early Learning Goals; it was developed with this material as reference.

2.5 Interviews with childminders

Forty-six from an original sample of 50 childminders from four regions involved in the EPPE project were interviewed. As the project team was concerned with identifying effective pedagogical practices, only those who had had training in supporting children's learning were selected for inclusion in the sample. In order to guarantee this criterion our initial intention was to sample from child minders who were accredited to the National Childminding Association (NCMA) and eligible for the DfES Nursery Education Grant. Unfortunately this proved to be impossible as only one of the areas at this time had a fully functioning accreditation system in place. The other

areas were at different stages of developing their accreditation systems. It was therefore decided, in order to preserve some level of consistency, that our sample should come from recommendations made by the local authority (LA) experts responsible for the registration of childminders and advisers involved in providing childminder training and professional support. The criterion we gave them was to identify childminders who had had some training, preferably to NVQ2 or above, who according to their professional judgement, offered good practice. Thus the names of 'good' childminders were identified using professional judgement at LA level (of these, 10 were randomly selected from three areas). All 10 were interviewed from two of the areas, and 8 were interviewed in the third. The other 20 were taken from the area with the fully accredited NCMA network. Of these 17 were interviewed. All childminders had to be caring for one child or more aged between 3 to 5 years at the time of the interview.

Information was collected using semi-structured telephone interviews lasting from 45 minutes to 1 hour over a period of two months. One in three interviews was taped and all interviews were conducted by the same, trained researcher (see appendix 3 for childminder interview). Each childminder was asked at the end of the interview to supply a diary record of two sessions (session = half a day) during one week.

Of the respondents only one was male. Twenty-one were aged between 28 and 40 years, the remaining 25 were between 40 and 54 years old. Although the range of childminding experience extended from between 2 and 21 years, 61% of the sample had provided services for families for between 10 and 20 years.

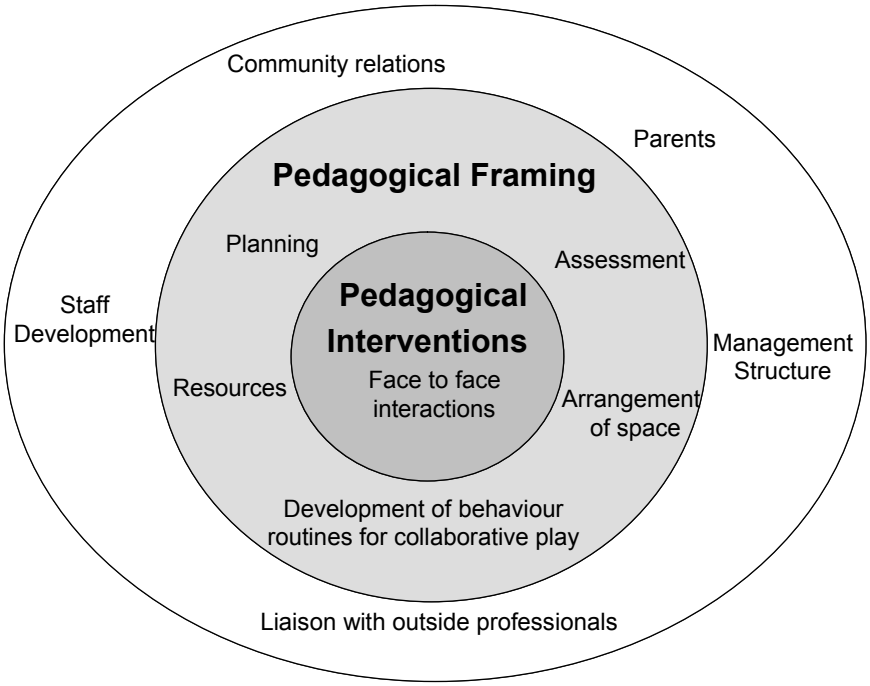
2.6 The systematic observations

The systematic observations explored the everyday pedagogical practices in 12 of the 14 case study settings. Not all of the 14 settings could be visited due to the time-constraints of the project. Each visit lasted for one week and systematic 20 minute timed observations (see Appendix 5) were carried out with a stratified random sample of children who were observed throughout the sessions – indoors, outdoors, during snack time, and on departure. The aim was to capture typical learning and teaching episodes so they could be analysed for pedagogy, challenge, and for social context.

The systematic observations allowed us to focus on individual children within a setting to record for every 30 second interval, for a total of 20 minutes. For each 30 second interval we coded the child's learning activities, the social groupings in which they spent their time, and the kinds of pedagogical interactions they had with staff. We were eager to learn how children experienced the six areas of learning in the Foundation Stage curriculum (QCA, 2000), and the ways in which adults supported the target child.

In analysing the pedagogy of a setting we made a firm distinction between 'pedagogical interactions' which were face to face encounters and 'pedagogical framing' which was the behind-the-scenes' work including provision of *materials, arrangement of space*, and the establishment of *daily routines* to support cooperation and equitable use of resources. The systematic Target Child Observations focused on the inner and middle layers of the pedagogical model in Figure 4 which illustrates how the aspects of pedagogy all fit together.

Figure 4: Pedagogical model



The deliberate sampling of children at different ages and abilities allowed us to investigate different pedagogical strategies for younger children, very capable learners and children who were struggling, as well as the different experience of boys and girls. Careful recording of the qualifications of staff also allowed us to explore possible differences in pedagogy related to different training.

The Target Child Observation (TCO) instrument [refer to Appendix] was applied to 254 children (about 20 children in each setting) to investigate broad trends across all case study settings. After considering the twelve case study settings collectively, the most effective of all (3 settings) were compared to the rest. This comparison provides information about practice which distinguishes "excellent" from "good" settings. The excellent settings had outstanding developmental outcomes while those in the good settings made strong – but not outstanding progress.

Training and piloting the Target Child Observation system took place in a range of Foundation stage settings which were unrelated to the EPEY case study settings. This phase lasted for 2 months which began in January 2002. The target child observations were collected from visits to case study settings between March and July 2002. Inter-rater reliability of the Target Child Observation system was calculated using Kappa, and the results for all codes ranged between 0.572 and 0.841. Details are to be reported in further technical papers.

Analysing longer episodes in the systematic observations
Of the 254 Target Child Observations, 141 were randomly selected for this more fine-grained qualitative analysis. The 20 minute Target Child Observation was first divided into learning episodes. The learning episodes recorded in this detailed way were coherent activities which were initiated either by children or adults, and lasted for at least one minute. An example would be the target child painting at an easel,

during which she used her fingers and brushes to put the paint onto the paper, and then started to mix different colours together on the paper. The child then stopped, took the paper from the easel, hung it to dry, took off her apron, washed her hands and then wandered around the class coming to the socio-dramatic play area where she started to do the ironing. The observation of the child then continued in the socio-dramatic area. As the child started to wander towards a new activity, this would be marked as the end of the episode.

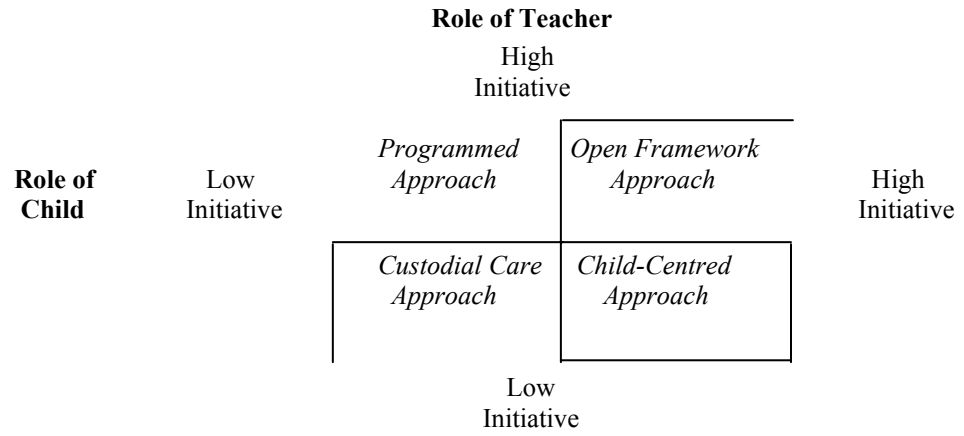
The learning episodes were examined to provide an analysis of who initiated and choose each activity (staff member or child), the cognitive challenge (i.e. did the activity really 'push' the child intellectually), the adult's most important contribution, the resources and materials which supported learning, and the routines (daily/weekly timetables and 'rules' such as those for sharing) which the staff established so that children could learn on their own (see Appendix 7).

This closer analysis of the timed observations (30-second intervals across the day) and the longer episodes (randomly selected activity) allowed us to answer questions about child choice, curricular balance, pedagogical interactions and the kinds of social groupings which nurture learning.

Part 3 *Literature on effective pedagogy*

3.1 The role of the teacher/practitioner in early childhood

Teaching involves appropriate interaction with learners, using a number of strategies (central to these are play, hands-on experience and language development) to enable learning to take place. These interactions will be effected by practices implicit in the social context in which the learning is taking place (Wood, 1986). A typology of commonly applied 'early childhood education curriculum models' (*sic*) is provided by Weikart (2000) and shown in the model below. The categories applied are broadly



consistent with others developed by Weikart (1972), Kohlberg & Mayer, (1972) and Baumrind, (1971) and the EPPE research suggests that as 'ideal types' they apply just as well to the UK early childhood context as to the US context where they were first developed (Siraj-Blatchford *et al,* 1999). The only analytical difficulty may be in terms of the definition of curriculum applied by Weikart, and the way the term 'initiative' is used. According to Weikart the major organising principle to be considered is the role of either high or low curriculum 'initiation' on the part of the teacher/adult and the child (Weikart, 2000, p58). But in his subsequent elaboration of the various categories of 'educational approach', *high teacher initiative* is described predominantly in terms of the highly structured pedagogy, and *high child initiative* in terms of the learner's control over the curriculum.

The major organising principle might therefore be better conceived in the binary terms of pedagogy and curriculum. This would also be consistent with Bernstein's (1981) elaborate analysis of pedagogic codes and their modalities of practice. While a comprehensive structural analysis of the various coding principles employed in early education lies beyond the scope of this review, we can employ Bernstein's (1981) formulation of *classification* and *frame* to distinguish between the different forms of early childhood practice. As Bernstein himself has noted, while this more limited use of the terms may not have been intended when he first coined them, it does demonstrate their analytical value (Bernstein, 1996, p3).

Classification refers to the degree of boundary maintenance between curriculum subject contents. Where the curriculum content is clearly defined in terms of subjects we can therefore refer to that as strong classification. Framing is about who controls what; who selects, sequences, paces etc. the learning. When framing is weak the child (or parent) has more apparent control, when strong it is the educator/ professional who is most clearly in control. So for example, a collaborative,

progressive and permissive classroom illustrates weak framing and a traditional didactic one strong framing.

The *Programmed approach* is highly teacher directed providing for little initiative on the part of the child. The rationale for this method is drawn significantly from learning theory. This pedagogy is usually applied where curriculum objectives may be clearly (and objectively) classified and is likely to be most effective where learning involves the development of basic skills or memorisation. The curriculum content is often highly differentiated.

The *Open-framework approach* provides the teacher with a strong pedagogic structure (or framework) that supports the child in their explorations and interactions with, and reflections upon, the learning environment. In this model, the curriculum classification is weaker as the child has a good deal of freedom to make choices between the various learning environments that are on offer. But the optional environments (e.g. sand, water, block play, puzzles etc.) are often provided to achieve particular (usually cognitive or conceptual) curriculum aims, although these may be more or less identified by the setting. In some settings children's choices are carefully monitored and a broad and balanced curriculum is encouraged over the medium or long term.

In the most extreme applications of the *Child-centred approach* the teacher responds entirely to the individual child's interests and activities. More often, topic or project themes are adopted that have been chosen especially to appeal to the children's interests. The curriculum emphasis is on encouraging children's independence, their social and emotional growth, creativity and self-expression. The classroom/playroom environment is often rich in stimuli, permissive and provides for open-ended exploration and discovery.

Of course each of these approaches remain 'ideal types' and the practices in many settings will involve a combination of all three.

3.2 So what is pedagogy and why does it matter?

The term ‘pedagogy’ has often been defined quite broadly in continental Europe and the term is sometimes applied in a similar way in UK early childhood contexts. At times this results in accounts where the use of the terms pedagogy and curriculum appear indistinguishable. The recent approach in the House of Commons Select Committee on Education and Employment (2000) enquiry into early learning has been quite different; where ‘pedagogy’ (referred to as ‘teaching’) has been understood as analytically distinct and complementary to, the term; ‘curriculum’. Here curriculum may be understood as denoting all of the knowledge, skills and values that children are meant to learn in educational establishments. For many alternative purposes curriculum has also been defined to include all of the hidden and/or unintentional learning as well.

Pedagogy is often referred to as the *practice* (or the *art*, the *science* or the *craft*) of teaching but in the early years any adequate conception of educative practice must be wide enough to include the provision of learning environments for play and exploration. The term ‘teaching’ may therefore be unhelpful in this context, but effective early childhood pedagogy must still be ‘instructive’. Instruction may therefore be defined to incorporate all of those processes that occur within the classroom that aim to initiate or maintain learning processes and/or to be effective means to achieve educational goals (Creemers, 1994). In these terms it is clear that every effective form of pedagogy must be instructive in some way.

Different early years practices are informed by different educational philosophies and values and by the different assumptions that are held about learning, child development, appropriate styles of instruction, and curricula. So it isn't at all surprising that the pedagogic practices applied in different educational sectors and settings should be different. In fact there are wide differences of opinion and variation in understanding regarding the degree of influence that adults should have over the curriculum (Bennett *et al.,*1997). However, in both oral and written submissions of evidence to the House of Commons Select Committee on Education and Employment there was widespread agreement that 'Early Years education should be play-based'. In accepting the terms set out above it can be seen that the provision of an instructive play environment in itself constitutes an instructive technique and to be an effective pedagogue requires the practitioner to be skilled in the selection of appropriate techniques to facilitate learning.

As Rumbold (DES, 1990) observed, in the UK there has been a widespread consensus regarding the importance of play among early childhood educators for many years. However, this has not led to pedagogic uniformity (Bennett *et al.,* 1997). In common with the views of many authorities and practitioners, particularly in Scandinavia, early years pedagogy has often been seen in direct opposition to practices involving 'teaching'. It is therefore extremely significant that the role of the practitioner is defined in the new *Curriculum guidance for the foundation stage* (DfEE/QCA, 2000) as an explicit 'teaching' role that includes:

"establishing relationships with children and their parents, planning the learning environment and curriculum, supporting and extending children's play, learning and development, and assessing children's achievements and planning their next steps". (p1)

While the introductory statements refer to the different ways that children learn, and the need for practitioners to draw upon; 'a range of teaching and care strategies', the desirability of applying 'play' based pedagogy is re-emphasised:

"Practitioners need to plan learning experiences of the highest quality, considering both children's needs and achievements and the range of learning experiences that will help them make progress. Well-planned play is a key way in which children learn with enjoyment and challenge during the foundation stage."(p7)

In arguing for a 'scientific basis for the art of teaching', Gage (1985) has referred to the distinction between knowledge that is general (nomothetic knowledge), and knowledge that applies to the understanding of a particular event or individual (ideographic knowledge). He argued that teachers creatively apply their nomothetic knowledge to the ideographic problems posed by the unique class of children that they are faced with; with all of their specific needs, socio-cultural status and cognitive and affective demands. *Pedagogy* refers to that set of instructional techniques and strategies which enable learning to take place and provide opportunities for the acquisition of knowledge, skills, attitudes and dispositions within a particular social and material context. It refers to the interactive process between teacher and learner and to the learning environment (which includes the concrete learning environment, the family and community).

This provides a definition wide enough to take in such indirect instructional behaviours as the encouragement of parental involvement while distinguishing it from curriculum in the terms previously suggested. A wide range of authorities (incl. Mortimore, 1999, Leach & Moon, 1999, Bowman et al 2001) have applied essentially the same model where, in their day-to-day interactions with children and parents,

capable educators are seen to draw upon a repertoire of pedagogical techniques that have been in some way tested and/or stood the test of time and experience. From this perspective the task of this study is to identify more fully the range of techniques applied by the most effective pedagogues in early childhood education.

3.3 What has research already told us about effective practice?
In recent years a number of writers have argued that any focus on 'effectiveness' in the early years is mistaken. As Pascal & Bertram (1999) have argued:

"What constitutes an 'appropriate' curriculum [sic] for young children is still hotly disputed but it is increasingly apparent that simplistic outcome measures, which only look to knowledge and skill competence in the short term, are seriously underestimating the issue" (p93).

However, some longitudinal studies from America have provided a powerful justification for pre-school education. The High/Scope Perry Pre-school evaluation (Schweinhart, Barnes & Weikart, 1993) showed the substantial benefits to be gained through pre-schooling for children brought up in poverty and at high risk of school failure. Most notably a benefit-cost analysis was conducted that has subsequently been widely cited; the evaluation found that:

"Dividing the $88,433 in benefits per participant by the $12,3546 in cost per participant, results in a benefit-cost ratio of $7.16 returned to the public for every dollar invested in the High/Scope Perry Pre-school programme". (Weikart, 2000, p65)

But while the benefits of a High/Scope pre-school programme have been widely accepted, this does not, in itself, show that pre-school education in general is beneficial or effective. To provide any evidence of this there has been a need for a much more comprehensive study. We have also needed to know more about the specific pedagogy that was applied by High/Scope as well as the variation of pedagogy applied across the early years sector. The research has suggested that social and motivational elements of early years programmes are as important as academic outcomes. In fact in some studies these have been demonstrated to be more important; programmes such as High/Scope have led to greater social outcomes than academic ones. This has been attributed to the process of teaching and learning in the High/Scope programme which emphasises interaction, reasoning, reflection and responsibility for self-learning (not uncommon in other frequently cited programmes e.g. Reggio Emilia). We need to be especially clear about the distinction between pedagogy and curriculum in this context. The High/Scope programme includes strong cognitive and socio-affective priorities, and the plan-do-review pedagogy may be especially effective in providing for both.

Research findings from the longitudinal study in New Zealand, 'Competent Children' (Wylie, 1998) suggests that by six years of age children gained higher or lower educational outcomes depending on a few factors including; age at which children started early childhood education (before 3 had better impact); quality of staff interactions with children; and the extent to which children were allowed to complete activities.

Some longitudinal studies have also shown us that children provided with direct or 'programmed' instruction sometimes do better in the short term than those provided with other forms of pedagogy (e.g. Millar & Bizzell, 1983, Karnes et al, 1983). But the studies also suggest that even when apparent, these gains are short lived, with all significant differences having 'washed out' within a year of the provision ending. Direct instruction has also been found to result in children showing significantly

increased stress/anxiety behaviours (Burts et al, 1990). A more recent and rigorous longitudinal study conducted by Schweinhart and Weikart (1997) showed little difference in the academic performance of children provided with direct instruction but significantly more emotional impairment and disturbance which later required more special educational provision. More importantly, the Schweinhart and Weikart study showed that the direct instruction group experienced more suspensions from work and more than double the rate of arrests than either of the other two groups by the age of 25. In terms of serious crimes requiring a custodial sentence, 43% of the direct instruction group gained a felony record, compared with 17% of the child-centred group and only 10% of the open framework group by the age of 25. Both the Schweinhart and Weikart (1997) study and the High/Scope Perry Pre-school study showed a significant difference in the percentage of young adults married and living with their spouses: While 31% of the open framework group and 18 % of the child-centred group were married at age 23, none of those experiencing the direct instruction programme were (Schweinhart and Weikart, 1997).

Other studies have shown that 'formal' approaches to teaching young children are counterproductive (Nabuco and Sylva, 1996) and can hinder young children's learning, generating higher anxiety and lower self-esteem. These studies also compare different types of educational programmes comparing High/Scope with a formal programme and a free-play programme. Developmental outcomes have been found to be best in those settings which emphasise a balance between child-initiated and teacher-directed activities.

Apart from the plan-do-review model, the other pedagogic strategy that might have contributed to the success of the Perry Pre-school program was the programme of outreach and parent involvement. This is clearly an area that would benefit from further research.

A meta-analysis of the effects of a small group of pre-school programmes which were considered to be of excellent quality was carried out by Lazar and Darlington (1982b). The authors limited their selective meta-analysis to pre-school programmes planned from the start as evaluation studies. Each individual project had an adequate sample size, used norm-referenced assessment tests to establish outcomes, assessed outcomes for comparison/control groups, and included a follow up on children well beyond school entry. By these strict criteria the results of 11 carefully monitored programmes were subjected to meta-analysis, a statistical exercise which enables researchers to compare the size of effect across many different studies. These early intervention programmes represent a wide variety of interventions, almost all aimed at disadvantaged children and all of high quality but often on a small-scale. Lazar and his colleagues compiled information on the education and employment of more than 2000 individuals who had participated in early intervention programmes when they were young. In addition, the researchers carried out interviews with the young adults at age 19 and their families.

Results from the meta-analysis showed that participation in excellent, cognitively oriented pre-school programmes was associated with later school competence and avoidance of assignment to 'special' education. Interviews revealed the individuals who had participated in the intervention programme talked to their parents more about 'life in school' and the parents themselves developed higher aspirations for employment of their children. This research suggested that the long-term effects of early childhood education lay not with IQ gains but with children remaining in mainstream education and developing positive views of themselves and their futures. We must note however that these high quality programmes were set up for

'demonstration' and 'research' – making generalisation to all early childhood programmes impossible.

Another important factor in relation to good, early education provision is how long a child receives it. The amount has a bearing on the extent to which children can show long term benefits; in other words, the more early education provision you get the more likely you are to retain longer term benefits. According to Zigler and Styfco (2001) there are two key benefits of early education; to support a good start to school through enabling a better transition, and most pre-school education is successful in this, and the longer term benefits which are based on more intensive pre-school intervention, particularly for children from poorer backgrounds. They argue that a short period of early education is not an inoculation against disadvantage, just as a short period of healthy nutrition is not a guarantee of health for life. Provision needs to be sustained. Recent Government policy in the UK to increase the amount of time children spend in early education is to be welcomed when it is coupled with practitioners who are skilled, knowledgeable and sensitive to an appropriate pedagogy and curriculum for young children. The successful Child-Parent Centres (CPCs) study that Zigler and Styfco refer to (Reynolds, A, Temple, J, Robertson, D, Mann, E, 2001), which showed substantial long term benefits, also showed that: "Quality in the CPC appeared to be relatively high with respect to staff training and curricula" (p. 2379).

3.4 What has the study of learning shown us?
It has long been recognised that play has a major role in early childhood development (Franklin, 1999; US National Research Council, 2001). Both Piaget and Vygotsky have written about the strong link between symbolic play with the development of representation and transformation and language and literacy (Schwartzman, 1978; Pellegrini et al, 1991)

There is also a good deal of evidence within the psychological literature that learning is an interactive event, where the child actively constructs his/her own understandings within a social and physical environment. Hohmann and Weikart (1995) call this "active learning" (p.17) and define this as "learning in which the child, by acting on objects and interacting with people, ideas and events, constructs new understandings" (p.17). This means that young children require direct and immediate experiences that will enable them to derive meaning from these experiences based on their previous ones. The learning environment must, therefore, provide children with opportunities to be active and take the initiative to learn. The role of the adult is to provide these opportunities and experiences through setting the physical and intellectual environment and through consistent planning and rigorous assessment so that appropriate opportunities may be given. Adult support is also important to encourage children to learn in an active and participatory way.

Hohmann and Weikart (1995) drew upon the work of Piaget to inform the High/Scope curriculum programme that emphasises interaction, reasoning, reflection and responsibility for self-learning. In recent years High/Scope has drawn equally from the work of Lev Vygotsky, however, we are keen not to over-emphasise what we consider to be largely a false dichotomy created between these two theorists by many educationalists. High/Scope has taken a developmental perspective on learning in which they argue that human development takes place in predictable sequences, but that each individual is unique in his/her characteristics. Learning experiences should, therefore, be developmentally appropriate for each child. Appropriateness is defined as the extent to which a learning activity:

- Exercises and challenges the capacities of the learner

- Encourages and helps the learner to develop unique patterns of interest, talents and reach goals
- Presents experiences in which the learner is able to master, generalise and retain concepts, skills and knowledge and which relate to previous experiences, whilst linking to future learning expectations.

(Adapted from Hohmann and Weikart, 1995, p.15).

Piaget's theories were based on the concept of cognitive structures and on an assumption that children are natural and active developers of their own understandings. Cognitive structures are defined as patterns of physical or mental action that underlie specific acts of intelligence and that are conditioned by stages of development. As the child matures, she/he is able to integrate more abstract structures into his/her understanding. Action and self-directed problem-solving, leading to control of the environment, are considered to be at the root of learning and development (Wood, 1988). Whilst Piagetian theory is a theory of child development and not of education, as Davis (1991) writes, it has had an important potential influence on education. Piagetian principles have been interpreted as implying a pedagogy based on the need for the educator to facilitate developmental change by enabling the child to discover contradictions or 'disequalibria' with her/his prior knowledge and understanding. In our analysis of the effective pedagogy project findings below we refer to this as a process of 'cognitive construction', where in this classic account the construction is founded upon the child's prior understanding.

But before we look any further into this we must recognise that children do not learn in a social vacuum. In fact much of the child's earliest learning is the product of interactions with adults and peers even where there has been no deliberate attempt to provide instruction. The child learns a great deal from observations of those more competent than themselves. We can draw upon the social cognitivist theory of Bandura (1986) to account for the way in which social (and media) experiences provide for this sort of observational learning. For Bandura the process of social learning begins with 'imitative' learning which is subsequently internalised through identification and thereby incorporated in the individual's self-concept. The child's construction in this case is founded upon the behaviour of the other person who is considered especially significant. The value of early years educators modeling appropriate language, behaviour, skills and attitudes should therefore be especially recognised; such modelling is likely to be consequential in terms of both cognitive, social and dispositional outcomes.

'Significant others' are also crucial in encouraging the child's engagement with other stimuli. Even when an experience contrasts markedly with some aspect of a child's prior learning, we can't take it for granted that children will 'construct', we can't assume that they will learn from that experience. For learning to take place they need to be motivated to engage with the cognitive challenge that is provided for them. In the case of imitative learning this is often provided by the child's desire to 'be like' and/or 'to be liked' by the person imitated. In other cases we may need to make specific provision for the child's affective involvement. Piaget described a learning mechanism which involved the child in the active elaboration of their own mental structures as they assimilated and accommodated new experiences. But crucially for Piaget, in his early accounts of this learning process, while he argued that it was triggered by the recognition of some 'disequilibrium' between the child's new phenomenon or experience and their prior knowledge and skill, he said that it was 'fuelled' by the *affect* of their 'interest'. The child's interest in the new phenomenon or experience might be the spontaneous result of their natural curiosity but it could also be influenced by the adults and peers around them. Piaget therefore argued that the child's intellectual adaptation was as much an adaptation to the social environment

as it was an adaptation to their physical and material environment. This provides a potentially strong foundation for early years educational practice as it accounts simultaneously for learning and for motivation.

Unfortunately, this latter part of Piaget's theory, which provides an account of the role of social factors in early childhood development has been largely neglected (DeVries, 1997). Yet Piaget argued that adult-child and peer relations influence every aspect of development and that affective and personality development are intimately related to intellectual and moral development. Perhaps most importantly, Piaget argued that reciprocity in peer relations provide the foundations for perspective taking and for decentring. This suggests that collaborative play is exceptionally important for children. According to DeVries, Piaget proposed ways in which co-operative social interaction between children and between children and adults function to promote cognitive, affective and moral development; and as she says:

If Piaget was correct, then we need to reconsider the structure and methods of our schools from the point of view of long-term effects on children's socio-moral, affective and intellectual development. (ibid p.16)

So far we have argued that learning may be considered to be the result of a cognitive *construction* that is only achieved when the child is motivated and *involved*.

For Pascal and Bertram (1997) effective learning demands an essentially symbiotic relationship to be developed between the child and the adult. Drawing heavily upon the extensive work on experiential learning carried out by Ferre Laevers (1994) in Belgium, they refer to the importance of the 'involvement' of the child, and they also refer to the 'engagement' of the teacher. For Pascal and Bertram, an involved child is one who has focused their attention upon an activity and is persistent, they are intrinsically motivated, rarely distracted, appearing fascinated and absorbed by their activity. The learning relationship is considered symbiotic by Pascal and Bertram (1997) because;

not only does the adults' style of engagement directly effect the children's levels of involvement, but the children's involvement effects the adult's style of engagement. (op cit p135)

As Pascal and Bertram recognise, involvement and engagement do not operate in an affective vacuum; both the 'learning disposition' of the child, and the 'professional well being' of the teacher provide significant conditions for learning. The concept of 'involvement' provides us with a condition for the kind of learning described by Piaget and (as we shall see) for Vygotsky. But it is important to recognise that Laevers originally derived the notion of 'engagement' from Rogers (1983) whose influence has been greater in the areas of counselling and therapy than in education. As a basis for the development of an analysis of pedagogy, engagement in these terms may have benefits, but it also has some major drawbacks.

Its exclusive focus of attention on the adult's affective 'engagement' distracts attention from the sort of cognitive construction we have been discussing, as well as the influence of peers who may be encouraged to scaffold each other's learning. It effectively excludes the possibility of recognising the value of direct instruction for some areas of teaching, and this is despite its widespread practice in the early years in e.g. teaching songs, rhymes, giving instructions in safety, hygiene, toileting etc. In prioritising process, it also provides no basis for assessing the content of the engagement e.g. to what extent the teacher's intervention may be considered 'worthwhile' or, with regard to 'content', whether the 'correct' information is imparted.

If we consider learning to be the result of a process of *construction* that is only achieved when the child is *involved*, it is entirely consistent to treat the part played by the effective educator in precisely the same way. The cognitive *construction* in this case is mutual where each party engages with the understanding of the other and learning is achieved through a process of reflexive 'co-construction'. A necessary condition is that both parties are *involved*, and, for the resultant learning to be worthwhile, that the content should be *instructive*.

Vygotsky suggested that learning has a cultural and social dimension and that human consciousness is achieved through the internalisation of shared social behaviour (Vygotsky, 1978). Whilst Vygotsky accepted Piaget's theory of the growth of concepts through experiences, Vygotsky also wrote about the ways in which concepts could be drawn from other people's understanding, which becomes assimilated into our own cognitive structures. From this perspective we can see that constructions based upon the understanding of others can be as important as any constructions from our own. And as children develop a greater capacity for recognising the constructions of others (as they develop a 'theory of mind') they simultaneously develop the capability of appreciating their own constructions in abstract. This reflective, 'social construction' may therefore lead to metacognition in the sense often considered in discussions of problems of 'transfer' where it is assumed that in gaining knowledge 'about' ones learning, children have greater control over it and may be empowered to apply it in different contexts. In Flavell's (1976) germinal paper, metacognition is (at least implicitly) defined to encompass this aspect as well as everything else; 'that you could come to believe about yourself and other people as cognitive processors' (p907).

The work done by Vygotsky and other theorists interested in learning as situated social practice, also highlights the interactive aspects of learning and the importance of instruction in the process of learning. Not only are new concepts constructed within the child's cognitive framework, but also ways of doing and thinking may be re-constructed through processes of formal and informal instruction. Goncu and Rogoff (1998) conducted studies with middle-class mothers and their young children, investigating children's involvement in shared thinking with varying adult support and children's later performance on a categorisation task. This was compared to a study conducted with another adult and child (not the child's parent). In both conditions, the adults followed one of several scripts, each one of which varied the amount of adult support and in the demand it placed on the participation of the child. The results of the studies found that there were significant correlations between children's post-test performance for categorisation and the degree of adult support and child participation. Children benefited equally from various combinations of participation as long as there was adult guidance. This led the researchers to conclude that the important factor in the activity was the provision of leadership in learning by the adult. The researchers argue that "the particular balance of responsibility may have been less important than the active and guided thinking of the learner" (Goncu and Rogoff, 1998, p.346). This is consistent with the Vygotskian position that cognitive development is the result of the child participating in problem solving, together with a partner who can provide leadership and guidance within the activity.

The concept of pedagogy as providing a scaffolding for learning has been important for informing instruction in the early years. Scaffolding derives from Vygotsky's notion of the 'zone of proximal development', a zone that includes everything that is achievable with assistance, that would otherwise lay beyond individual capability. This zone varies with culture, society, and experience but it must be fostered in joint activity that creates a context for child and expert interaction within a social context.

The crucial aspect is that the assistance, where it is required, must be appropriate to the needs of the learner. Studies with mothers and their very young children (for example Cross, 1977) have found that mothers intuitively adjust their utterances to the edge of their children's linguistic competence. Adults assisting young children to learn, therefore, must be aware of their levels of understanding and competence and respond appropriately.

An elaboration of this idea is available from the experiments of Wood (1986), where mothers were given the task of assisting their children in building a tower from 21 wooden pieces that had to be fitted together in a specific sequence. Each mother was shown the solution and instructed to teach her four-year-old child to put the blocks together. The task allowed for many incorrect solutions and could not have been completed by the young children alone. The researchers found that the instructions given by the mother varied in the amount of control they gave to the child. When mothers gave general verbal prompts, this was construed as giving more control to the child. If the child needed more guidance, more specific verbal prompts were given thus giving less control to the child. A mother also indicated the materials required, prepared the blocks for assembly or demonstrated the process. These final strategies increased control of the task to the mother and decreased control to the child. The most successful children in the study were guided in particular ways by their mothers. If a child failed to complete a required action, the most effective strategy was to increase the help given and therefore decrease the level of control experienced by the child. If a child succeeded, the level of control for the child was increased. As instruction was given by the mothers in response to the actions of the children, Wood (1986) called these responses 'contingent' because the mother would change her level of control depending on her judgement of the success or failure of the child. This is a highly complex and demanding process and dependent on the skills and sensitivity of the 'teacher/pedagogue' (in this case, the mother).

Bruner (1996) elaborates the concept of scaffolding further, from the initial position that teacher and child are in asymmetrical states, with the teacher knowing and understanding more than the child. It is incumbent upon the teacher to not only transfer knowledge, but also understand what the child already knows. In order to do this, the teacher must induct the child into the discourse and format of the activity itself. The role of the child within the activity may then be orchestrated by the teacher and supplemented by actions that:

- *Highlight the critical features of the activity.*
- *Buffer the child's attention against distractions.*
- *Channel the child's activities so that she/he can succeed.*
- *Turn errors into opportunities to learn.*
- *Enable procedures to be commented on and explained.*
- *Allow responsibility for the activity to be gradually transferred to the learner, contingent on his/her ability to succeed.*

(Adapted from Meadows, 1994, p.314).

Wood and Wood (1996) summarise scaffolding as the support and augmentation children need to develop their cognitive resources and enable the learner to reach her/his zone of proximal development. For learning to take place, the child must be actively involved in the process and there is to be a mutuality between learner and teacher where collaboration and negotiation is possible, despite the asymmetrical nature of the relationship (Bruner, 1996). In Wells' research in Bristol (1985), the most successful learning interactions were achieved by parents when they

responded to their children by negotiation and by developing the child's own interests. This study aimed to chart the sequence of language development in young children and to investigate the possible causes of differences in development between individuals. Wells wanted to establish whether there were causal links between early language performance and later academic achievement as correlational links had previously been established (The Central Advisory Council for Education, 1963). Wells' study had three phases, beginning in 1972 and ending in 1977, with children tracked through the phases. In phase one 128 children were studied, half from the age of 15 months and half from 39 months. Their linguistic development was recorded at three monthly intervals over two and a quarter years. During phase two, 20 of the older group were observed in the classroom once a month to track the process of learning to read. At phase three, 32 of the younger children were tested on entry to school to assess their readiness for formal education and were recorded visually and orally in the classroom. Parents were also interviewed and teacher assessments of linguistic, academic and social abilities were recorded. The children were tested again at the age of seven.

The results of this extensive research found that all the children except one had a mastery of English by the time they started school. The pattern of development was very much the same across all the children although the rate at which individuals progressed was different. Whilst there was no difference in language attainment across classes, there was a difference in school achievement. The researchers found that some aspects of parental speech seemed to be associated with increased development of linguistic competence in children. These aspects involved the parents talking more to their children, making direct requests and frequently asking them questions. The effective parents would also continue a topic from the child's previous utterance or activity and extend the topic in conversation with the child.

Wells concluded that this provided a shared focus of attention between parent and child, although the interaction was child-directed. It was also found that there was a change in adult speech as the children developed so that parents would use repeating and expansion strategies less as the child's development advanced. As the children gained competence, the parents would be more likely to make their own statements or explanations, sometimes correct the child, and refer more often to objects and events outside the immediate environment. Wells writes:

What these findings all suggest, then, is that what is most important in the behaviour of the child's parents and other caretakers is sensitivity to his current state-his level of communicative ability and his immediate interests-and to the meaning intentions he is endeavouring to communicate; also a desire to help and encourage him to participate in the interaction. (Wells, 1985, p.33)

As Bruner (1996) has argued, culture shapes the mind, and learning must be considered within its situated context. Lave (1991) concludes that learning is not about the internalisation of knowledge by individuals, but is a process of "becoming a member of a sustained community of practice" (p.65). Here, learning is seen as situated social practice, where the individual is developing her/his *identity* as a member of a particular community and this is seen as a socially negotiated and mediated process. Rogoff, Mistry and Mosier (1993) in their studies, observed interactions between young children and their caregivers in four communities and found that learning was taking place within all the communities, despite very different interactions taking place. Within the two working class communities, where the children were not segregated from adult activities, children were keen observers and were oriented by their caregivers towards any adult activity that was taking place. Within the two middle class communities, where children were segregated from

adults activities, learning was a more structured process, with the caregiver managing learning through a special discourse and organised instructive events.

Similarly, in her study of the development of narrative between mothers and their young children within different language communities in the USA, Melzi (2000) found that Spanish speaking mothers were active listeners and gave general conversational guidelines to their children, whilst English speaking mothers took a more guiding role in organising the story for the child. Melzi (2000) concludes that the "elicitation styles adopted by European American and Latino mothers corresponded to cultural definitions of conversational contexts and roles…" (p.157). These studies demonstrate how children in different communities are enabled to learn the accepted practices and discourses within their social contexts. While some children may be disadvantaged by the lack of continuity of experience between the home and school, research has yet to demonstrate the extent of any such disadvantage.

The advantage for the parent is that in the home environment the child's own interest and previous knowledge can become the starting point for any pedagogic exchange. Between parent and child there can be an interactive partnership, where the child becomes responsible for the direction of much of his/her own learning, with the parent serving as a source of information as it is required. Tizard and Hughes' study (1984) corroborate these findings. This influential study was designed to compare the language experience of 30 four-year-old girls at home and at school. The main areas of interest were:

- The amount of adult-child conversation in the home and school settings.
- The nature of conversations in the two settings.
- The activity or context in which conversation took place.
- The adult's curriculum.
- The role of the adult in the child's play.

Half of the children were defined as coming from working-class families and half were from middle-class families. All the children attended a morning nursery school session and spent the afternoons at home with their mothers. The children wore radio-microphones for three consecutive mornings at nursery school and for two consecutive afternoons at home and an observer was present to note the context of the talk. Tizard and Hughes (1994) found that, whilst the conversational exchanges in the home were rich and encouraged the active participation on the part of the children, the exchanges in the nursery school between adults and children were impoverished, with teachers posing a series of questions, rather than fostering conversations. This led to teachers underestimating the abilities of many of the children in the nursery. The young children in this study tended to initiate interactions, ask questions and seek information more readily at home than at school. In the home much of the conversation and activity between adults and children concerned everyday life and was initiated by the child in response to happenings within the situation. The parent was uniquely able to respond to the child because she/he too was part of the context. Parents were also better able than other adults to respond to their child's previous understandings and experiences. Wood (1986) calls this 'intersubjectivity' and concludes that conditions for the generation of a contingent learning environment are more likely to be located within the home than in school.

There are lessons here, however, for school pedagogy and especially for teaching young children. Stremmel (1993) writes about a pedagogic activity, which he calls 'responsive teaching'. This occurs when the caregiver gives sensitive guidance and

assistance to the child as required. Stremmel (1993) stresses the intersubjectivity of responsive teaching which concerns the sharing of purpose between child and teacher and is affirmed in the "interactive patterns" (p.2) established between the teacher and the child within the joint activity. In this process, the teacher must understand the cognitive, cultural and social perspective of the learner so that the child can be enabled to "build bridges" (p.3) between what he/she knows and what she/he is capable for knowing. 'Responsive teaching' seems to be very close to the patterns of exchange observed between parents and children in the studies referred to above. Whilst the early years teacher cannot have such a detailed knowledge and understanding of each child as parents, it is the professional responsibility of teachers to gain as much understanding of individual children as possible and attempt to gain an insight, not only into the child's cognitive functioning, but also his/her social and cultural context.

By doing this, the teacher will be better able to promote development of metacognition in the learner where the child gains insight into the process of learning itself and understands more clearly the processes involved. Human beings need to be able to act in unfamiliar circumstances and must, therefore, apply knowledge and understandings gained in one situation to different circumstances. This requires skills and strategies within the metacognitive domain and to be effective, teachers must provide the means by which children may acquire these skills and strategies. The High/Scope curriculum model (Hohmann and Weikart, 1995) is very clear in its emphasis on the development of metacognitive skills in order to develop the child as an effective learner. Both the High/Scope evidence and Pramling's (1983, 1990) research has shown that engaging children in 'metacognitive discourses' can be extremely beneficial and as the *Curriculum guidance for the foundation stage* states:

Teaching means systematically helping children to learn so that they are helped to make connections in their learning and are actively led forward, as well as helped to reflect on what they have already learnt.
(QCA, 2000, p.22).

3.5 The Curriculum guidance for the foundation stage
In the *Curriculum guidance for the foundation stage* (DfEE/QCA, 2000) the declared 'principles for early years education' include the need to provide for 'parent partnership', 'planned and free play' and 'practitioner intervention':

- *Parents and practitioners should work together.*
- *There should be opportunities for children to engage in activities planned by adults and also those they initiate themselves.*
- *Practitioners must be able to observe and respond appropriately to children (p11).*

The term pedagogy is not applied in the document but practice is referred to in the introductory pages in terms of 'curriculum structure' (p11, 15,16), and in terms of 'observing and responding' (p11, 15). In these terms, more specific guidance is provided and it is suggested that practitioners should:

- *make effective use of unexpected and unforeseen opportunities for children's learning that arise from everyday events and routines;*
- *make systematic observations and assessments of each child's achievements, interests and learning styles;*
- *use these observations and assessments to identify learning priorities and plan relevant and motivating learning experiences for each child;*

- *help children to see the purpose of activities;*
- *accommodate the different ways children learn by planning for the same learning objective in a range of different ways.*

In considering effective teaching further, the Guidance (p22-24) also refers to the need to use:

- *rich language and correct grammar;*
- *conversation and carefully framed questions;*
- *'direct' teaching (of e.g. skills);*
- *children teaching each other*.

In considering the 'skilful and well-planned observation of children', it is suggested that practitioners should document children's progress and performance in writing, photographs and/or on video/audio tape. It is also suggested that children's play activity should be logged to identify any gaps in their experience; *'so that practitioners can plan a balanced curriculum that takes note of children's strengths, interests and needs'.* (p24)

A range of pedagogical practices related to the development of positive learning dispositions and 'emergent' learning are also suggested (as popularised in the emergent literacy approach (Bowman et al, 2001 p186). These include practitioner modelling (p22, 29) and the provision of socio-dramatic role-play (p31). We are also advised that assessment should be used to provide individual children with challenging but *'achievable'* experiences, that; *'do not frustrate or demoralise children'* (p30).

A systematic analysis of the *Curriculum guidance for the foundation stage* (CGFS) has been carried out to identify the general principles underlying the statements of '*What the practitioner needs to do'* in each area of learning (Siraj-Blatchford, I. & J., 2001). Most of the statements in the CGFS refer to curriculum, where practitioners are advised to encourage or provide specific experiences and activities and a number of the statements are pedagogically ambiguous. A few recommendations in these sections suggest that practitioners should 'recognise', 'be aware' or 'know' things. Many more refer to the importance of 'helping' or 'supporting' children in unspecified ways, or 'enabling' or 'giving time' or 'promoting' particular understandings.

Despite these ambiguities, there are a total of 185 unambiguous pedagogic recommendations. The largest group of those (88 statements) relates to practitioner 'modelling' through demonstrating appropriate language, values and practices. The 21 statements which refer to direct teaching are concerned entirely with the development of skills and/or safe practices. Twenty-seven refer to practitioners providing praise, encouragement and reinforcement, 14 to questioning, and 24 to other forms of verbal intervention, interaction and discussion. Eleven statements relate to the importance of practitioners observing, listening and assessing. Peer collaboration and visits made outside the centre are also included.

It is generally recognised that different pedagogic techniques are required for the effective learning of different forms of knowledge, skills and understanding (Siraj-Blatchford, 1999) and it is therefore interesting to note that analysis of the *Curriculum guidance for the foundation stage* (DfEE/QCA, 2000) suggests a greater emphasis upon direct teaching in subject areas involving practical *skill* development. There is also an emphasis on questioning in 'mathematics', and on external visits in the area

of ‘knowledge and understanding of the world’: Throughout the Guidance document the emphasis upon practitioner modelling is striking and suggests a general acceptance of the ‘emergent’ learning philosophy in all six areas of the Early Learning Goals (Siraj-Blatchford, I. & J., 2001).

3.6 Summary

Our review of the literature suggests the need to identify the pedagogic models being applied by the most effective settings and to find out how these are realised in practice. Given the possibility that the success of High Scope may have been in part the result of an emphasis on outreach and parent involvement, there is also a need to identify any association between the most effective settings and this kind of initiative.

There is also a need to identify the degree to which the CGFS is currently being applied and the perceptions of practitioners towards it.

Our review of the research conducted in developmental psychology and the study of learning suggests that young children are active in their learning and the most effective early years pedagogy requires both the educator and the child to be simultaneously ‘involved’ in an ‘instructive’ process of ‘co-construction’. The concept of ‘scaffolding’ has been developed as a powerful metaphor in defining the most central role of the educator. The concept has been shown to have a strong empirical grounding that includes research that has identified the part played by ‘effective’ parents in encouraging and extending conversations with their children at an early age.

We have argued that effective pedagogy in the early years is an essentially ‘instructive’ practice that involves both the kind of interaction traditionally associated with the term teaching, and also includes the provision of instructive learning environments and routines. We argue that where young children have freely chosen to play within an instructive learning environment, adult interventions may be especially effective. However, we have also noted that these interactions rarely occur in practice. We have also argued that any heavy emphasis upon direct teaching and programmed instruction should be avoided in the early years.

Part 4 *Interrogation of the data*

4.1 Interrogation of pedagogical practices from the EPPE data

Attention has already been drawn to the iterative nature of the analytical process that has been applied in the study (in the introduction). A systematic approach was taken to analyse the qualitative data collected in the staff observations and interviews and parent interviews through seeking triangulation from two sources:

1. The EPPE quantitative data sources (i.e. Tests of outcomes and environmental quality rating instruments)
2. The data that were collected from different sources applying different qualitative methodologies.

This systematic (although non-linear) process of iterative triangulation characterises the general approach that we took in adopting a mixed methodology design in the study. Apart from exploiting the usual benefits of triangulation in achieving greater internal validity, we were concerned to reflect more closely the process of working 'back and forth between inductive and deductive models of thinking' (Creswell, 1994 p178).

The analytic nodes that were initially derived, in a process of grounded induction and through 'anticipatory data reduction' (Miles and Huberman, 1994), and in a close reading of the observational data, were therefore continually reworked and adapted through the subsequent analyses of other data. As soon as the first phase of this process was complete, and all of the qualitative data had been initially coded, the 'reduced data' (Miles and Huberman, 1994) was interrogated further in the hope of finding pedagogic explanations for the cognitive and social outcomes provided by the EPPE multi-level analysis. Where the pedagogic findings provided explanatory support for any particular EPPE outcome, the data was explored further in those individual case studies achieving the best results in those terms. Hypotheses were also developed to be investigated in further deductive analysis of the EPPE project quantitative data. A number of significant correlations were thus identified between particular items in the Early Childhood Environmental Rating Scales (ECERS), and particular multi-level analysis outcomes.

The qualitative data collected in the case studies has therefore provided a means by which the EPPE quantitative findings could be triangulated. This process simultaneously provided us with an opportunity to develop and to test a series of explanatory hypotheses. The relatively low score of setting 017 NC (which scores highly on social development) in terms of pre-reading skills could be explained by the relatively low level of cognitive challenge that we found to be provided in this area of the curriculum. In another example (421, a Nursery School), the EPPE Adult/Child Interaction scale (ARNETT scale) showed a high degree of consistency in staff behaviour with a strong emphasis on positive responses to children and their emotional and learning needs. When we studied the qualitative data we were then able to confirm that the quality of the interaction in that setting was very high. The staff clearly enjoyed being with the children and engaged with them in a respectful and caring way, without criticism or harshness.

The qualitative data was also interrogated in an effort to provide explanations for some of the correlations that have been identified in the quantitative analysis. Five general areas of correlation were identified in the EPPE study (Siraj-Blatchford, 2001) and each is summarised and discussed at greater length in the following pages:

(i) A correlation was found between the total verbal cognitive outcome model and the ECERS-R Personal Care Routines sub-scale. The item 'Greetings and Departing' within this sub-scale prioritises the individual attention given to children by the staff in welcoming them to the setting and in keeping them involved in activities throughout the day. Pre Reading outcomes were also found to be correlated with the ECERS-R Language Reasoning sub-scale which has the item 'Using Language to develop reasoning skills'. Another correlation was identified between the Early Number Concepts outcome and the ECERS-E Science: Living Processes item.

The 'Using language' item is scored highly in settings where they talk through problem solving, introduce concepts and language such as same-different, big-little and identify logical relationships and sequences when children are playing with stimulating materials. The ECERS-E Science: Living Processes item, by contrast, is scored highly in settings where the children are encouraged to engage in investigations of their own and to ask questions and record their results. In-depth analysis of the case study observations has led us to identify the specific qualities of Adult-Child Interaction, and 'sustained shared thinking' (Wells, 1985) that are especially effective (see 4.4 – 4.6), but we also found that the practitioners' understanding of the curriculum couldn't be taken for granted (see 4.9 and 4.10).

(ii) A correlation was found between the ECERS-E sub-scale for Diversity and children's progress across the cognitive outcomes in Pre-reading, Early Number Concepts and Picture Similarities.

The Diversity sub-scale includes differentiation, including gender and race equality, observation, meeting individual needs, record keeping and ability grouping in the sub-scale items, and while any association with the latter (ability grouping?) in the qualitative data proved to be unclear, a good deal of our qualitative evidence (see Section 4.8) confirmed the importance of formative assessment to meet children's particular needs. A significant correlation was also found between performance on *Picture Similarities* and the item 'Provision for Parents' (ECERS-R Parents and Staff sub-scale). This item prioritises the sharing of 'child-related information between parents and staff' and the involvement of parents in decision making about their child's learning programme.

(iii) The ECERS-R item on 'Discipline' (on the Interaction sub-scale) was found to be correlated with 'Co-operation and conformity', 'Independence and concentration', and 'Peer sociability'.

The Discipline item scores settings highly where a non-punitive approach is applied, where staff help the children to talk out their problems and think of solutions while being sensitive to the feelings of others. It also scores highly where staff are consistent and pro-active in supporting the children in developing their social skills through e.g. using 'story books and group discussions to work through common conflicts'. Some tendency was also found to associate the *Co-operation and conformity* outcome with 'Staff-child interactions' (ECERS-R Interaction sub-scale) and settings score highly on this item when staff-child relations are warm and caring, respectful and where they are sympathetic in response to any children being hurt, upset or angry.

Peer sociability was also found to be negatively associated with 'Group Time' (ECERS-R Programme structure sub-scale). This item scores settings highly where the children are only gathered together as a whole-group for short periods and they remain interested and involved. While it is conceivable that the practice of grouping

children together for long periods inappropriately is detrimental to peer sociability, it is equally plausible that their restlessness at these times may actually have led to the allocation of the negative outcome. It may also be significant that the only case study to achieve a relatively negative outcome (not positively significant) on this model was the daycare centre 214 where the children generally attend for a 'long' whole day, however this centre also contributed to making the children less worried and anxious.

(iv) The 'Indoor Space' item in the ECERS-R Space and Furnishings subscale was also found to be negatively associated with 'Anti-social, worried and upset'. This item scores settings highly where there is ample indoor space and children are allowed to move around freely. Given the positive outcomes of each of the case studies on this outcome further qualitative analysis on this particular correlation was considered inappropriate.

(v) The quantitative findings have also shown that the children who were taken to the library, who read with their parents, who played with letters and numbers and who sang songs and rhymes at home had a head start even at age 3 on cognitive scores.

We therefore expected our more effective settings to reveal a home education more in line with these behaviours; it was what the settings did with the parents and children to encourage these behaviours that was of interest to us in this study. The correlation noted in (ii) above associating performance on *Picture Similarities* and the item 'Provision for Parents' which prioritised the sharing of 'child-related information between parents and staff', and the involvement of parents in decision-making about their child's learning programme provided a starting point for detailed analysis (see further discussion below).

4.2 The Effective Pedagogy in the Early Years project findings

Our research suggests that the educational performance of settings does not appear to be related entirely or even mainly to differences in philosophies or to curriculum priorities. All of the settings in this study have sound leadership, good communications, and shared and consistent ways of working amongst the staff. Most of the case study settings combine both programmed teacher initiated group work and open-framework, teacher supported free choice provision. Most of the pedagogic interventions that we observed were good while some were excellent. We found that some of these interventions were planned but also that many were applied as an opportunity arose.

As previously suggested, throughout our study we have distinguished between 'pedagogical interactions' (specific behaviours on the part of adults) from 'pedagogical framing' (the behind-the-scenes aspects of pedagogy which include planning, resources, and establishment of routines). Our findings suggest that the most effective (excellent) settings provide both and achieve a balance between the opportunities provided for children to benefit from teacher initiated group work and the provision of freely chosen yet potentially instructive play activities. The evidence actually suggests that there is no *one* 'effective' pedagogy. Instead the effective pedagogue orchestrates pedagogy by making interventions (scaffolding, discussing, monitoring, allocating tasks), which are sensitive to the curriculum concept or skill being 'taught', taking into account the child's 'zone of proximal development', or at least that assumed in the particular social grouping.

The evidence also suggests that the achievements of settings against the cognitive outcomes appear to be directly related to the quantity and quality of the teacher/adult planned and initiated focused group work that is provided. While it is clear that an

instructive play environment may be provided that involves the child and encourages their cognitive construction or co-construction, there remains little research evidence to suggest that this is commonly achieved (Bennett & Kell, 1989).

We have argued that where we consider learning to be the result of a process of cognitive *construction* that is only achieved when the child is motivated and *involved*, it is entirely consistent to treat the part played by the effective educator in precisely the same way. The cognitive *construction* in this case is mutual where each party engages with the understanding of the other and learning is achieved through a process of reflexive 'co-construction'. A necessary condition in this is actually that both parties are *involved*, and, for the resultant learning to be worthwhile, that the content should be in some way *instructive*. Our analyses of the qualitative and quantitative data substantiate this model and our *r*esearch has therefore shown that adult-child interactions that involve some element of 'sustained shared thinking' or what Bruner calls 'joint involvement episodes' may be especially valuable in terms of child development.

Of course this does not suggest that most of the children's time needs to be dominated or led by adults. In the most effective settings the children spent around half of their time engaged in freely chosen play activities. What it does suggest, however, is that adults should use their involvement with children in a planned and focused way to encourage shared thinking. In achieving this, the provision of worksheets and/or over directed or didactic teaching is unhelpful. The socio-dramatic play of the home corner provides a particularly useful context for such interactions and we identified several incidents of staff getting directly involved in children's play, and stimulating their imagination by open questioning:

1.15 TEACHER 1 (Goes to home corner) - What's this?
CHILD - teatime
TEACHER 1 - can I join in?
CHILD - yes
TEACHER 1 - what's for dinner?
CHILD - Spaghetti
TEACHER 1 - what kind, long or short? [Encouraging descriptive language]
CHILD - Short
TEACHER 1 - Well I'll have a little bit.
CHILD - Would you like a yellow plate? What else would you like?
TEACHER 1- an egg please. (Document 106 NC obs 6)

But many opportunities were also missed and interactions sometimes involved very little cognitive challenge. We found that in the settings where shared thinking was most encouraged, a substantial proportion of interactions were child-initiated and they provided a better basis for learning right across the curriculum:

11.10am (BOY 7 (3:8) began crawling on all fours and acted like a dog)
(TEACHER 1 automatically became a dog, BOY 2 (3:5) copied and they began following each other around the room)
(TEACHER 1 then pretended to be the dog owner)
TEACHER 1- Oh come and have your dinner doggie
(BOY 2 (3:5) appeared to like this game)
(TEACHER 1 led them into the home corner)
(Four children have now joined in. TEACHER 1 gets some bowls and puts them on the floor… Once they had finished dinner:)

TEACHER 1- Come on doggies, bedtime in here
(TEACHER 1 led them to the book area)
TEACHER 1- Right, go to bed doggies, Night, Night (All lie down)
(TEACHER 1 began singing)
TEACHER 1- See my little doggies sleeping until noon
(All jumped up in anticipation of what was going to happen)
[BOY 2 (3:5) is the main focus- he joined in and seemed to enjoy it]
[Good spontaneous activity ended up reading and sharing book about dogs]
[Curriculum plans followed beautifully. Expression++] (Document 214 obs 7)

We also found many incidents of staff getting directly involved in children's play and stimulating children's imagination by open questioning:

Teacher: Oh I think I need my gloves on.
Child: I've got crocodile gloves.
Teacher: Do they bite?
Child: No
Teacher: Oh that's good. What do crocodiles eat then?
Child: Spiders. (Document 214 DC doc)

But despite some really good practice at times, the study also identified many cases of missed opportunity:

GIRL 1 (3:6) Volcanoes are a bit scary
TEACHER 1 They're not nice are they!
[No discussion about why volcanoes might be scary] (Document 219 PDN obs 2)

GIRL 8 (3:5) walks past. She is wearing a hat and carrying a handbag from the home corner, "I'm going to the pub."
NURSERY OFFICER 1 "OK see you later..... What are you going to do at the pub?"
GIRL 8 (3:5) "I work there."
10.00 NURSERY OFFICER 1 "What do you do?"
GIRL 8 (3:5) "Have a drink."
GIRL 8 (3:5) leaves. (Document 417 NC obs 7)

By way of comparison, the following interaction shows what may be achieved by children of the same age when they are supported and encouraged:

Boy: (boy 4:8) "How did God make himself?"
Teacher: (teacher) "Well in most of the books about God, it says God just is."
Boy: "Well how did God make us?"
Teacher: "I don't know. What do you think?"
Boy: "I don't know."
Teacher: "Well how would <u>you</u> make yourself?"
Girl: (girl 4:9) "I would make myself happy."
Boy: "I think when God made us, we made God."
Teacher: "He putted (sic) our bones in first and then he putted our blood on the bones and then he putted our skin on."
Boy: "No – he opened up our bones and put the blood in us."
Girl: "No – if he put it in our bones, the blood wouldn't come out."
Boy: (changing subject) "You don't know what's there (pointing to throat). These are microphones to talk. My dad told me."
Girl: "You're wrong."
Boy: "No! I'm right!"

Girl: "No and your dad's wrong."
Boy: "No he's not! He's right……. I want to draw"
He goes to get paper and pencils.
Boy: returns and begins to draw "a bone".
Girl: "That's a funny bone."
Boy: "Yes – but it is a bone."
Girl: (drawing) "He's got long arms to let him make his dinner. 'Cos my mum's got long arms like me. (pauses and thinks) ….. If the blood was inside your bones.."
Boy: interrupting "I know your blood is out of your bones….."
Girl: (ignoring Boy's comment and pointing to a blood vessel in her finger) Look! So Why are you telling me blood's in the bones?……
I know God's got blood."
Boy: "No he hasn't."
Girl: "Yes he has. Why do you think we have blood and everybody has blood and he doesn't? …….
(Showing her picture to Zoe – girl 3:11) Look I done (sic) God"
Girl2: "That's not God …. It's too little."
Boy: "So how did God make eyes and eyelashes?"
Teacher: "I don't know."
Girl: "I know – he does the bone in the eye (pointing to the iris) and then he paints the white."
Teacher: "So God paints you does he?"
Girl: "He painted your eyes."
Boy: "No it's not."
Girl: "It is."
Boy: "How does the paint stay on anyhow?"
Girl: (chanting) "Easy peasy lemon squeezy."
Boy: "I hate 'easy peasy lemon squeezy'."
Teacher: "So you don't think Girl's right then?"
Girl: "I am right and Boy's wrong."
Boy: "We're both wrong – well you're wrong and I didn't say anything."
[The following week the teacher brings in a dog's skull and the following week a skeleton - the discussion about bones and blood continues in detail and in an equally dramatic fashion!] (421 NS Vignette 1)

The qualitative analysis of our teacher observations appear to show a very clear association between curriculum differentiation and matching in terms of cognitive challenge (Appendix 7), and 'sustained shared thinking'. The qualitative evidence suggests that the better the setting does on each of these dimensions of good pedagogic practice the more cognitively effective it will be. The only setting that contradicts this tendency has been 413 where our research showed relatively little day-to-day preparation and organisation, poor scaffolding and little 'shared thinking'.

Case study observations suggest that the quality of adult interaction varies between quite good and poor. It is obvious that the staff miss many learning opportunities. They regularly demonstrate a lack of awareness of how conversations can be extended or how activities can reveal new experiences. Neither do they examine the extent of a child's understanding, either by careful listening, asking questions or making pertinent comments. Furthermore, unless directly involved with a group the most common interaction is for staff to watch quietly without much intervention. Observations show that planned lessons are usually delivered didactically with little understanding of the children's thought processes. They are also shorter than their designated time of 30 minutes each. Most last 15 to 20 minutes and move at a fast

pace without time for discussion, consolidation or reflection, supporting the view that they are unable to use activities to their educational potential.

(Fieldnotes and observations 413 PDN doc)

The fact that despite these limitations the setting was achieving significant cognitive outcomes needed to be accounted for. We have come to believe that the explanation lies in the special relationship that the (mainly private) settings have developed with their middle class parents, and the efforts that are made at home and with homework that is based upon worksheets (centre 413) provided by this private sector nursery (see section 4.13 below).

In the majority of settings there is clearly a need to provide more of what Stremmel (1993) has referred to as 'responsive teaching'. This occurs when a sharing of purpose between child and teacher is established within a joint activity. To achieve this, the adult must understand the cognitive, cultural and social perspective of the learner so that they can "build bridges" between what the child knows and what she/he is capable of knowing.

The quality of adult-child interactions in the most effective (excellent) settings in terms of the cognitive outcomes was particularly striking. The quality of interaction in setting 421 (Nursery School), for example, was very high. The EPPE Adult/Child Interaction Scale showed a high degree of consistency in staff behaviour with a strong emphasis on positive responses to children and their emotional and learning needs. The staff clearly enjoyed being with the children and engaged with them in a respectful caring way, without criticism or harshness. They encouraged the children to try new experiences and were very enthusiastic about their efforts. The staff appeared to be constantly aware of looking out for opportunities to scaffold children's learning by inviting children to say what they thought in order to assess their levels of knowledge and understanding. They intervened to 'model' when they thought it appropriate but also allowed the children time to explore for themselves. The adult interventions were most often in the form of questions that provoke speculation and extend the imagination; as in the following example of an adult participating in, and extending a child's imaginative play:

The NNEB 1 and a group of CHILDREN are seated at a table working with play dough.
It has taken BOY 1 (3:11) 5 minutes to make a play dough cake and he is now sticking plastic cutlery into it.
NNEB 1: "Would you like something else to use as candles on your cake? (Turning round to boxes placed on shelf behind her) Would you like match sticks or lolly sticks?"
BOY 1 (3:11) opts for lollipop sticks and the NNEB 1 passes the box to him. He removes the cutlery and starts to replace it with lollipop sticks……5 more minutes pass ……
BOY 1 (3:11) has finished his cake and starts to sing 'Happy Birthday' to NNEB 1.
NNEB 1 pretends to blow out the candles. "Do I have a present?"
BOY 1 (3:11) hands her a ball of playdough.
NNEB 1: "I wonder what's inside? I'll unwrap it."
NNEB 1 quickly makes the ball into a thumb pot and holds it out to BOY 1 (3:11). "It's empty!"
BOY 1 (3:11) takes a pinch of playdough and drops it into the thumb pot. "It's an egg."
NNEB 1 picking it out gingerly, "It's a strange shape."
[Another CHILD tries to take the 'egg']
NNEB 1: "Be very, very careful. It's an egg."

To BOY 1 (3:11) "What's it going to hatch into?"
BOY 1 (3:11) "A lion."
NNEB 1: "A lion?…Oh, I can see why it might hatch into a lion, it's got little hairy bits on it."
NNEB 1 sends BOY 1 (3:11) to put the egg somewhere safe to hatch. He takes the egg and goes into the bathroom.
[After a few minutes, BOY 1 (3:11) returns to the group]
NNEB 1: "Has the egg hatched?"
BOY 1 (3:11) "Yes."
NNEB 1: "What was it?"
BOY 1 (3:11) "A bird."
NNEB 1: "A bird? We'll have to take it outside at playtime and put it in a tree so it can fly away." (421 Vignette 8)

In setting 426 (Combined/Early Excellence Centre) the unit co-ordinator insisted that their good practice had developed from the quality of interactions with the children. These were based on a deep level of respect that arose from acknowledging the extent and depth of their emotional state at any one time (Nursery Teacher interview). The setting policy suggested that the adults should take every opportunity to extend children's language and literacy and develop a positive attitude to communication by listening actively and responding accordingly (policy). Our observations showed that the quality of interactions were very good with adults able to extend the children's understanding by skilful use of a variety of questioning techniques. The adults frequently participated and/or intervened to extend imaginative play.

There is a great deal of corroborating evidence within the psychological literature that learning is just this kind of interactive event, where the child actively constructs his/her own understanding within a social and physical environment. Hohmann and Weikart (1995) have called this "active learning" and define it as "learning in which the child, by acting on objects and interacting with people, ideas and events, constructs new understandings". Young children require direct and immediate experiences that will enable them to derive meaning from these experiences based on their previous ones. The learning environment must, therefore, provide children with opportunities to be active and to take the initiative to learn. The primary role of the adult is to provide these opportunities and experience through setting the physical *and intellectual* environment and through consistent planning and rigorous assessment so that appropriate opportunities may be given. The research shows that the more knowledge the adult has of the child the better matched their support and the more effective the subsequent learning; later we will look at this in relation to parents and home educational experience. Adult support is also important to *encourage* children to learn in an active and participatory way.

Research has suggested that a wide range of techniques and strategies might be appropriate (including direct teaching) where simple *procedural knowledge*, 'knowing about the things in the world, and how to act upon them' is concerned. The development of *conceptual knowledge* by contrast, which includes ideas and the understanding of principles and their relationship to each other, requires a constructive process. The maturest kind of knowledge is *metacognitive knowledge*, knowledge about one's own cognitive processes. This last kind of knowledge requires that learners are able to reflect on and regulate their own thinking, practices usually acquired during episodes of 'sustained shared thinking' offered by adults or more capable peers.

‘Sustained shared thinking’ may therefore be seen as a necessary pre-requisite for the most effective pedagogy; and this can be defined in terms of:

a) the teacher having an awareness of, and responding to the child’s understanding or capability vis-à-vis the particular subject/activity in question;

b) the child’s awareness of what is to be learnt (i.e. what is in the teachers mind);

c) the active co-construction of an idea or skill.

Both participants contribute to the learning process, although not necessarily in equal fashion, or to an equal extent. This formulation provides the basis for understanding the value of the sort of dialogue that we sometimes found involved in ‘sustained shared thinking’ and it also gives us a good basis to apply the literature on metacognition.

Also from this perspective ‘Scaffolding’ as a pedagogy can be seen to be successful in practice because the teacher, through providing the support that is needed for the child to achieve a successful outcome (or understanding) – has been required to first identify (assess) what the child’s current (unaided) capability/understanding is – and then, in the process, and as a result of their provision of the appropriate support they ensure the child has a good grasp of what a successful outcome actually is (i.e. what it is that they will later be aiming to achieve on their own). The adult then gradually withdraws or reduces the support and allows the child to develop confidence in their independent performance.

From this perspective the provision of exploratory play environments (e.g. sand/water play) will only be ‘effective’ if the materials/apparatus is chosen carefully to provide cognitive challenge within the ZPD *and* positive outcomes for the activity are either modelled, or otherwise identified in the children’s actions and encouraged. Of course that doesn’t mean that these activities would only be justified if they were structured to make them pedagogically effective in terms of learning – they might, for example, be intended to provide opportunities for the children to ‘express themselves’ or for free discovery and 'exploration'.

The value of practitioners modelling appropriate language, behaviour, skills and attitudes has been noted above and the emphasis placed on modelling within the *Curriculum guidance for the foundation stage* (DfEE/QCA, 2000) has also been noted. Our systematic observations and analysis of the case study data suggests that in the most effective settings modelling is often combined with sustained periods of shared thinking. These interactions are often child-initiated and they seem to provide a very significant basis for learning right across the curriculum: Two concrete examples drawn from the case studies clarify what is required of adults in these terms:

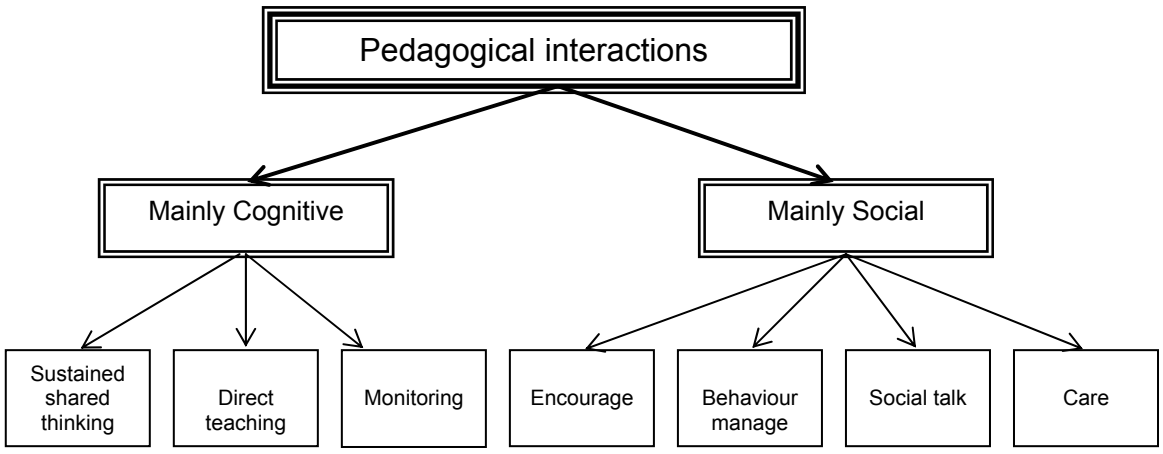
Example 1:
GIRL 7: - We found a coconut TEACHER 1!
TEACHER 1: - Well done! Oh it’s an acorn, if we planted it what do you think would grow?
GIRL 3: - a flower
TEACHER 1: - Not quite, if it came off that tree what would grow?
CHILD: - Don’t know!
TEACHER 1: - Ok, lets get a pot, some stones and soil and plant it to see (Off with 5 CHILDREN) Which way up do you think? I think on its side it will have the most chance. What do you think it will grow into, [Using opportunity presented by

children to model growth/wonder and to investigate: Children now have investment in it.]
CHILD: - A tree
TEACHER 1: - Mmmm, I wonder what kind? (Document 106 NC obs 6)

Example 2:
BOY 8 (4:1): who has been watching (various items floating on water), "Look at the fir cone. There's bubbles of air coming out."
NURSERY OFFICER 1: "It's spinning round."
[Modelling curiosity and desire to investigate further]
BOY 8 (4:1): "That's 'cos it's got air in it."
NURSERY OFFICER 1: picks up the fir cone and shows the CHILDREN how the scales go round the fir cone in a spiral, turning the fir cone round with a winding action, "When the air comes out in bubbles it makes the fir cone spin around."
GIRL 2E (4:9): uses a plastic tube to blow into the water, "Look bubbles."
NURSERY OFFICER 1: "What are you putting into the water to make bubbles?..... What's coming out of the tube?"
GIRL 2E (4:9) "Air." (Document 421 NS)

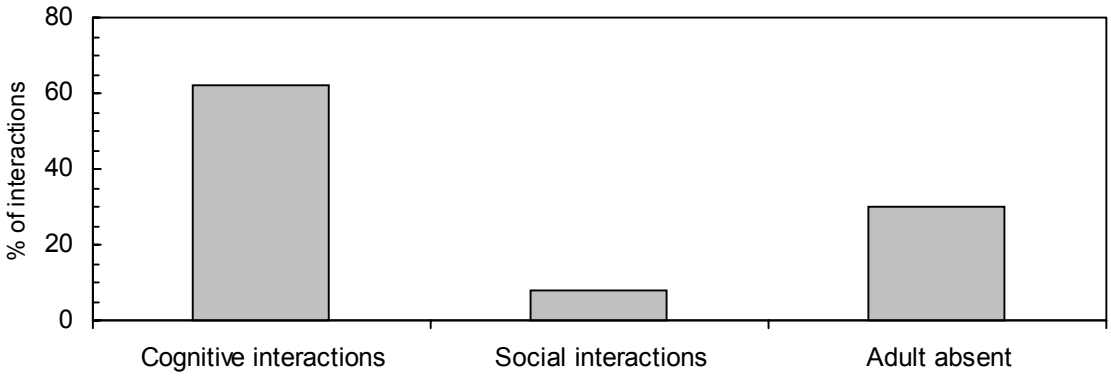
All pedagogical interactions which were made by adults to the target child during the systematic timed observations were recorded and assigned to different categories. These interactions were divided into: Cognitive pedagogical interactions and Social pedagogical interactions. These two types of interaction were then further divided as shown below in figure 5 (for full details refer to Appendix 5).

Figure 5 Pedagogical interactions (across all settings and curricular areas)



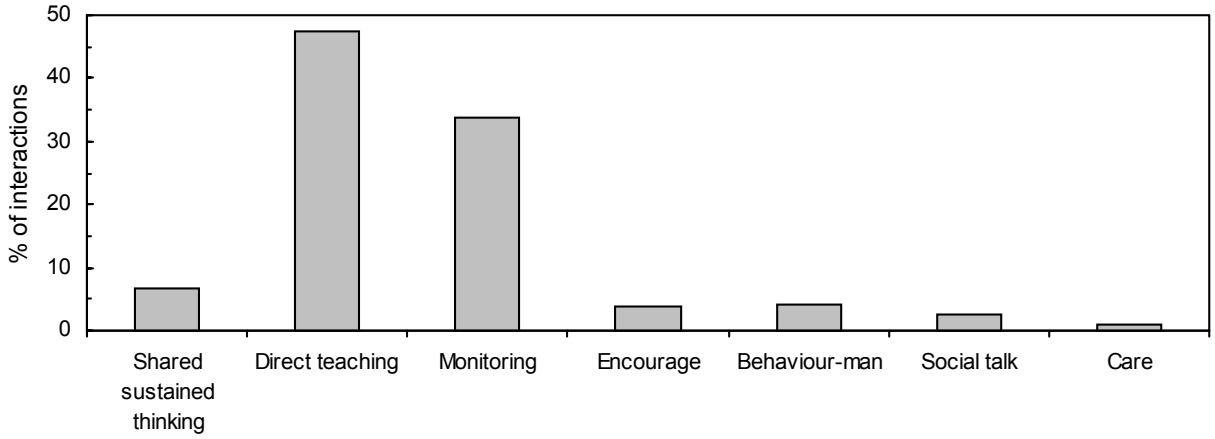
When all of the pedagogical interactions in all settings were analysed statistically, it was clear that practitioners used cognitive pedagogical interactions more often than social pedagogical interactions (Figure 6). Of course many adult utterances contained elements of both but it was not difficult to distinguish utterances which were ‘mainly pedagogical’ from those which were ‘mainly social’ in orientation.

Figure 6: Proportions of pedagogical interactions (across whole sample)



When the cognitive and social pedagogical interactions are further subdivided, we found that the most common pedagogical interactions were engaging in direct teaching and monitoring of children's activities (Figure 7). Although 'sustained shared thinking' was relatively rare, when it occurred, it was observed to extend children's thinking. Further evidence for this will be reported later. Socially oriented interactions such as behaviour management and encouragement on the part of staff were much less frequent than the more cognitive ones.

Figure 7: Cognitive and social interactions



4.3 Effectiveness

Settings have been divided into those with 'excellent' outcomes (3 settings whose EPPE profiles for children's cognitive and/or social assessments were outstanding) and 'good' (7 settings whose EPPE child profiles were very good in either social or cognitive outcomes and sometimes in both). Recall that target child observations were carried out in only 10 of the possible 12 case study centres. The figures which follow report the pedagogical practices of 'excellent' (i.e. the 3 centres with outstanding child outcomes) compared to the 'good' (i.e the 7 centres in which children's developmental outcomes were good-but-not-outstanding).

Figure 8a shows the different patterns of cognitive pedagogical interactions which children experienced with practitioners in excellent compared to good centres. For comparison purposes, the observations from reception class settings are also included in the figure. The children and practitioners in excellent centres engaged in the highest proportion of sustained shared thinking interactions, suggesting that the excellent settings promote intellectual gains in children through conversations with

children in which adult and child co-construct an idea or activity. For the practitioners in the good settings the most commonly used interaction was monitoring, a distinct difference to practitioners in the excellent and in the reception class settings.
(Note: that conventional tests of statistical significance have been conducted upon all the systematic observation data presented in this report. Details will be reported in further technical publications).

Figure 8a: Proportion of adult' cognitive pedagogical interactions in settings varying in effectiveness

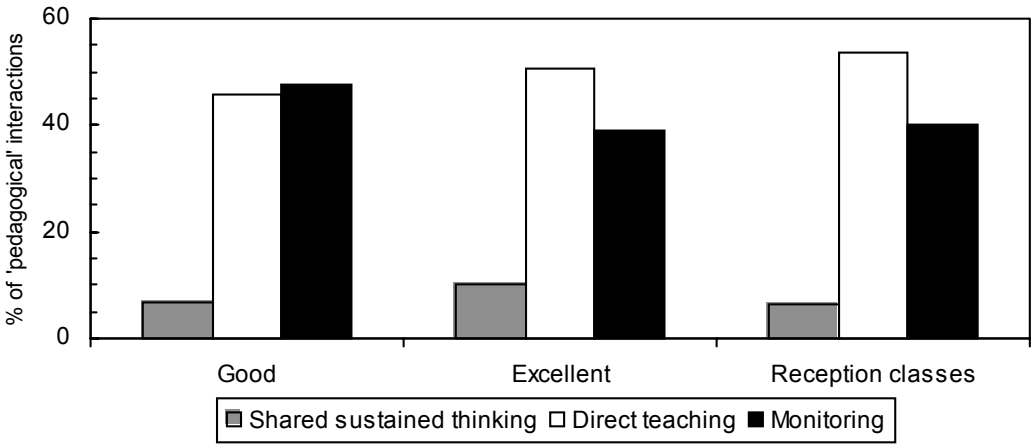


Figure 8b shows the different amounts of socially oriented pedagogical interactions practitioners engage in with children in excellent (highly effective), good (effective) and reception classes. More encouragement was seen in excellent compared to good settings. Staff in excellent centres also engaged in a higher proportion of social talk with children compared to those in reception classes. Children in good (but not excellent centres) experienced the highest proportion of caring interactions with their practitioners.

Figure 8b: Proportion of social pedagogical interactions in settings of varying effectiveness

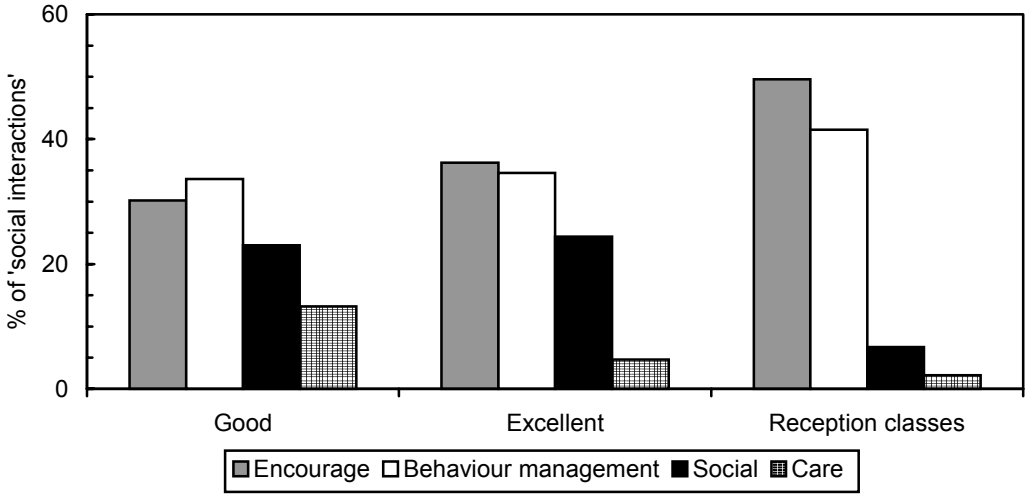
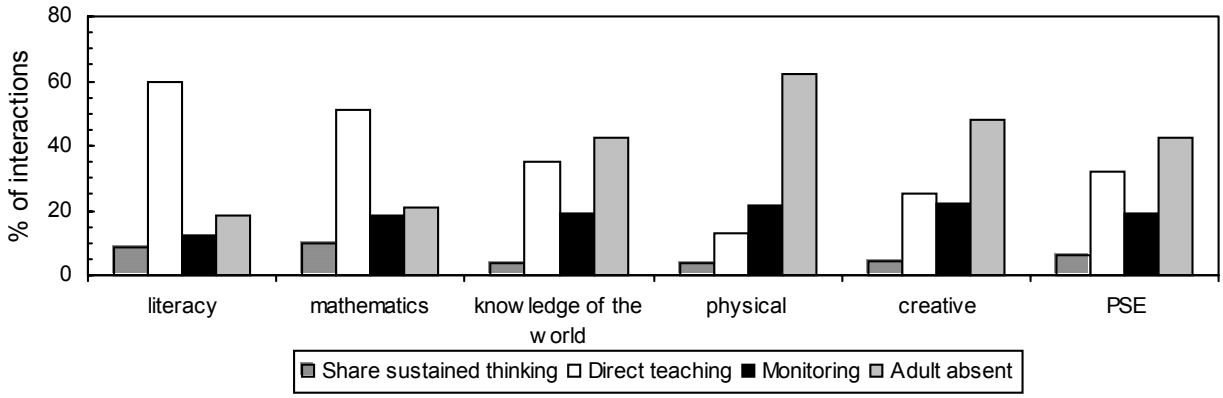


Figure 9 shows the pedagogical interactions used by adults in different areas of the Foundation Stage curriculum. The highest proportions of sustained shared thinking were observed during children's literacy and mathematics activities. This provides

clear evidence of the different ways in which practitioners respond to the children in the different areas of the curriculum. Levels of direct teacher involvement with children also varies between different curricular areas, with the highest proportion of direct involvement with children's learning (sustained shared thinking & direct teaching skills) occurring in literacy and mathematics compared to the lowest levels in physical development.

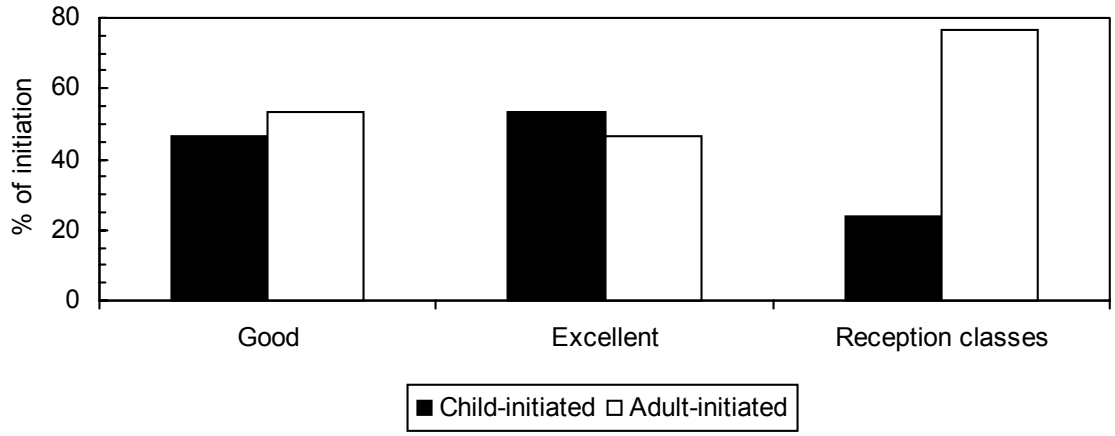
Figure 9: Pedagogical interactions broken down by curricular area



4.4 Challenge, Initiative and Extension

The analysis of randomly selected learning episodes from child observations allowed a deeper analysis of classroom pedagogy; these analyses included considering the initiation of episodes (by either child or staff member), the level of 'cognitive challenge' each episode provided for the child (see Appendix 7), and the staff's most important contribution to the learning episode. The latter is intended to shed light on the degree to how and which activities stretch children's thinking. Figure 10a considers from all learning episodes the proportion of adult or child-initiated learning episodes, and shows that in good and excellent settings a similar ratio of child-initiated episodes to adult-initiated episodes occurred. It is important to note here that in the excellent and good settings about half of the learning episodes were initiated by children, and as this report mainly focuses upon adult pedagogy, this very important side of these effective settings pedagogy may be overlooked. Two examples of children learning through child-initiated play appear in Appendix 8. In Reception classes, however, three quarters (76%) of all episodes were initiated by a staff member (which might be due to the higher level of structure).

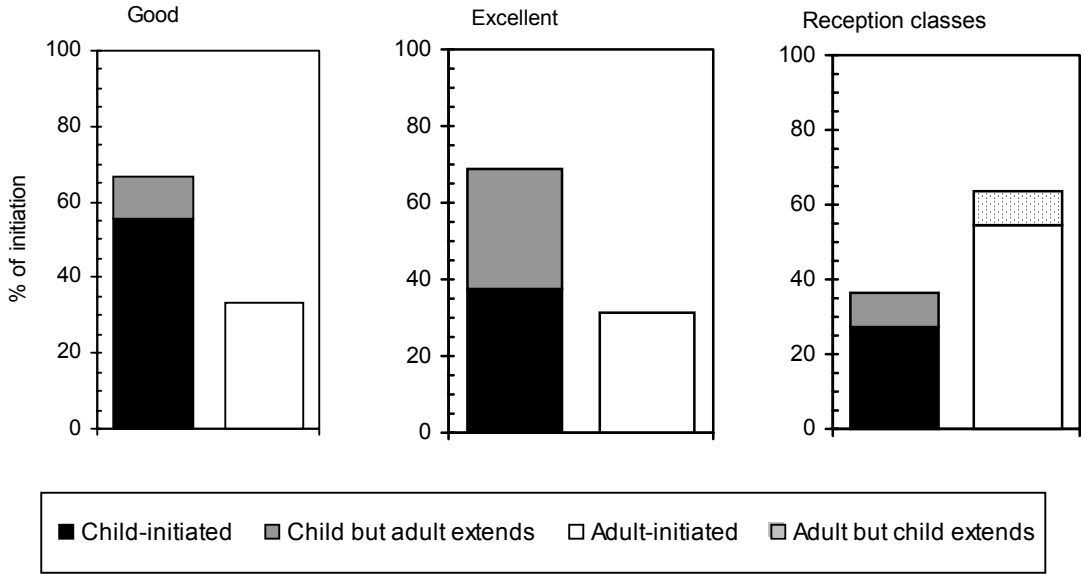
Figure 10a: Proportion of all learning episodes which were adult or child-initiated



The highest cognitive challenge episodes occurred in the Reception classes (29% of Reception classes learning episodes), the excellent settings had 26% of high challenge learning episodes, and 22% of the good settings learning episodes were high challenge.

When the initiation of just the high challenge activities is considered, an interesting picture emerges (figure 10b). In excellent settings the importance of staff members extending child-initiated episodes is very clear; just under half of child-initiated episodes observed as high cognitive challenge involved interventions from a staff member which extended the child's activities. The preponderance of staff extension in child-initiated activities appears unique to excellent centres, while reception classes are the only setting type which have children extending staff-initiated episodes, which is due to the different approach taken in Reception classes with a much larger emphasis upon adult-initiated activities. While the percentages of child-initiated high cognitive challenge episodes may look similar it must be remembered that these graphs are showing who initiated high cognitive challenge episodes in each type of setting.

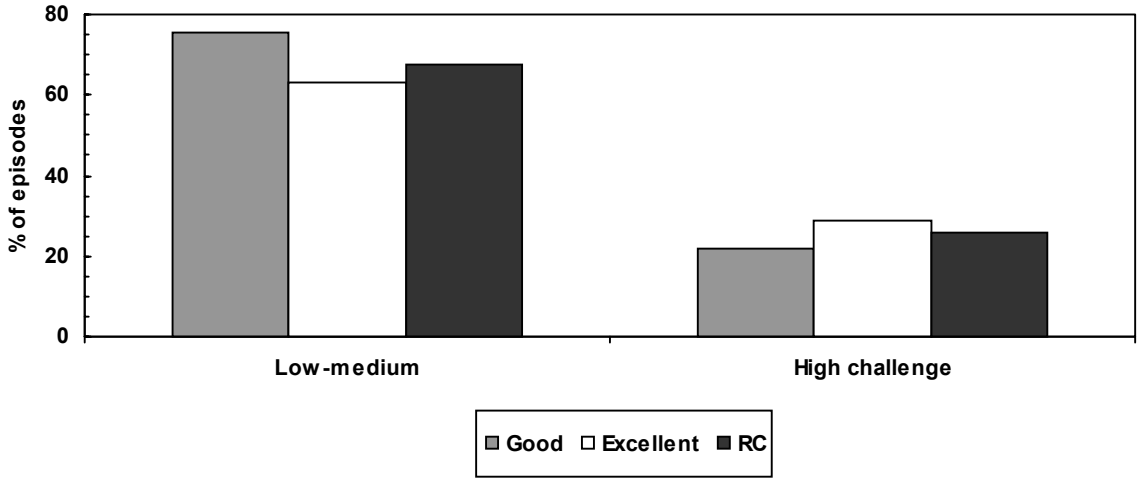
Figure 10b: Initiation of high cognitive challenge activities within each setting type



Our analysis of the episodes revealed how and why the 'critical moments' of learning episodes influenced and developed an idea or skill substantially. Analysis showed that the most common critical point ('lifting the level of thinking') occurred when a practitioner 'extended' a child-initiated episode by scaffolding, thematic conversation or direct teaching. Analysis of all 'critical moments' revealed that in Reception classes 29% of critical moments were 'lifted' by adult extension, 23% of the critical moments in excellent settings were extended by adults, dropping to just 15% in good settings. This reveals the pro-active nature of the adult's role in these settings.

When considering the high challenge episodes it can be seen in figure 11 that the highest proportions of high challenge episodes occur in the excellent settings. Conversely the good settings have the highest proportion of low-medium challenge episodes.

Figure 11: Occurrence of challenge episodes within each setting type



4.5 Questioning

Questioning has often been identified as involving an especially important set of strategies for teachers to master. Research by Wells (1985) and by Tizard and Hughes (1984) have shown that certain questioning strategies used at home were more effective in enabling learning than others that were applied in the nursery school (see section below). These were questions that were more open-ended and provided a framework for the child's conversation. In terms of our discussions of learning theory above, the adults' open-ended questioning may provide significant encouragement and/or extend sustained shared thinking.

The case study data suggests that open-ended questioning is associated with better cognitive achievement. The questioning practices in our case study settings appear to be broadly similar to those adopted in the KS2 classrooms studied by the Oracle project in 1996. But while Oracle identified 34.6% of all their KS2 teacher questions as 'closed' and 9.9% as 'open' this study shows the pre-school educators using 34.1% closed questions and only 5.1% of open questions (Table 1). This is an area of provision that could certainly be improved further (Note: especially given that these are all effective settings).

Table 1: Questioning

The nature of practitioners' questions		
	Observations	*% of all questions*
'Closed questions'	671	34.1
'Open questions'	101	5.1
'Other questions'	1195	60.8
Total questions	1967	100

We found it notable that a substantial number of the routine factual questions addressed to this age group are socially related caring questions such as 'are you alright?'

4.6 Talking through conflicts

A great deal of concern has been expressed about the need to respond further to the behaviour and emotional problems of young children growing up in disadvantaged areas. Some longitudinal studies have shown us that children provided with predominantly direct or 'programmed' instruction sometimes do better academically than those provided with other forms of pedagogy in the short term (e.g. Millar & Bizzell, 1983, Karnes et al, 1983). But the studies also suggest that, when apparent, these gains are short lived, with all significant differences having 'washed out' within a year of the provision ending. Highly structured didactic teaching has also been found to result in young children showing significantly increased stress/anxiety behaviour (Burts et al, 1990). A more recent and rigorous longitudinal study conducted by Schweinhart and Weikart (1997) showed little difference in the academic performance of young children provided exclusively with direct instruction, but they did find significantly more emotional impairment and disturbance leading to greater need for special educational provision. More importantly, the Schweinhart and Weikart study showed that the children in their direct instruction group, when they were adults experienced more suspensions from work and more than double the rate of arrests as either of the other two groups. In terms of serious crimes requiring a custodial sentence, 43% of the direct instruction group gained a felony record, compared with 17% of the child-centred group and only 10% of the open framework group by the age of 25. Both the Schweinhart and Weikart (1997) study and the High/Scope Perry Pre-school study showed a significant difference in the percentage of young adults married and living with their spouses: While 31% of the open framework group and 18 % of the child-centred group were married at age 23, none of those experiencing the direct instruction programme were (Schweinhart and Weikart, 1997)(The children here were from deprived areas/ backgrounds).

Other studies have also shown that an exclusively didactic and ‘formal’ approach to teaching young children is counterproductive (Nabuco and Sylva, 1996), and can hinder young children’s learning, generating higher anxiety and lower self-esteem. We have found that the most effective (excellent) settings combine the provision of open-framework, free play opportunities with more focused group work involving direct instruction (see 4.6 above). This more balanced approach would therefore appear to be the most desirable model to promote. Direct instruction is not harmful; it is the balance that is important.

That said, it may well be significant that the most effective settings also adopt discipline/behaviour policies that involve staff in supporting children in being assertive while rationalising and talking through their conflicts:

BOY 1 (4:8) points to BOY 11 (4:5): "He hit me."
TEACHER 1: "Well you say to him, ask him, why did he do it. Say, don't hit me."
TEACHER 1: "BOY 11 (4:5), BOY 4 (4:6) come here. Can you hear what BOY 5 (3:10) is saying? He doesn't like that. Only play it with children who WANT to play that game."

(Document 017 NC obs 5)

In settings which are less effective our observations show that there is often no follow up on children's misbehaviour, and on many occasions children are 'distracted' from interfering with other children, or simply instructed to stop.

Other settings that achieved positive social/behavioural outcomes adopt similar policies and appear to have benefited in similar terms.

(TEACHER 1 notes BOY 2 (3:10)'s coat on the floor)

TEACHER 1- BOY 2 (3:10), guess what I found, I found it on the floor, can you put it on your peg and I'll look after the computer for you.
BOY 2 (3:10) - No, I'm busy at the moment.
TEACHER 1- Well, if you don't you can't play on the computer.
BOY 2 (3:10) - I don't want to ok?
TEACHER 1- You will have to come off the computer. (Spoken in a friendly, fun tone)

(TEACHER 1 gets distracted - a parent arrives to give a gift)
(TEACHER 1 returns to BOY 2 (3:10))
TEACHER 1- OK, can you go and put your coat away?
BOY 2 (3:10) - No.
TEACHER 1- Did you enjoy your lunch today?
BOY 2 (3:10) - Yes.
TEACHER 1- What did you have?
BOY 2 (3:10) - Soup
TEACHER 1- OK, one second and then go and hang your coat up.
BOY 2 (3:10) - I want to load the game.
TEACHER 1- OK, but I want you to do good listening. If you don't put your coat away, you'll have to come off the computer and then you'll be sad.
BOY 2 (3:10) - Well, set up the colours then.
TEACHER 1- OK, I'll set up the colours while you hang your coat up.
(BOY 2 (3:10) eventually did as he was asked) (TEACHER 1 really persevered with this issue. According to TEACHER 1, BOY 2 (3:10)'s behaviour can be difficult, she believes it needs to be worked on).
(TEACHER 1 spoke in a friendly, warm tone throughout)

(Document 225 EEC obs 4)

GIRL 3 (4:0) is crying. There has been an incident in the role-play area.
NURSERY OFFICER 1 goes to her and quietly asks, "What's happened?"
Then to BOY 6 (4:0)- GIRL 3 (4:0)'s twin) "What happened BOY 6 (4:0)?" in an even tone.
NURSERY OFFICER 1 talks quietly to both of them and GIRL 3 (4:0) stops crying. The children return to the role-play area.

(Document 421 NS obs 4)

It is instructive to compare these strategies with some of the others recorded by our researchers. In one setting (214 DC), for example, a nursery with some behaviour problems (scoring minus 1 for peer sociability), when any child is hurt or bothered by another child they are encouraged to say; 'NO, NO I don't like it.' But then no other action is often taken (214 obs 1). When our researchers questioned this they were told by a member of staff that she believed in trying to get the children to solve their own problems. She had taught the children to say 'No' and has told them to say it louder and louder until they need to call for help.

(EY WORKER 1 returned and heard GIRL 6 (4:9) screaming (whilst playing)
EY WORKER 1 - Uh, what's the noise for (as she went up to GIRL 6 (4:9))
GIRL 6 (4:9) - I was chasing her
GIRL 1 (4:9) - Yes, but she was upsetting me. GIRL 6 (4:9) should ask me if it bothers me
EY WORKER 1 - Quite right

(Document 214 DC obs 2)

Our observations showed that only too often there is no follow up on children's misbehaviour, and on many occasions children are simply 'distracted' from interfering with other children, or just instructed to stop.

4.7 Organisational structures for learning

All but one of the case study settings routinely combined both programmed and open-framework provision (Weikart, 2000). The programmed provision involved focused group work that was often highly teacher directed and provided for little initiative on the part of the children. This pedagogy is usually applied where it is considered that curriculum objectives may be clearly (and objectively) classified and it is likely to be most effective where learning involves the development of basic skills, procedural knowledge or memorisation.

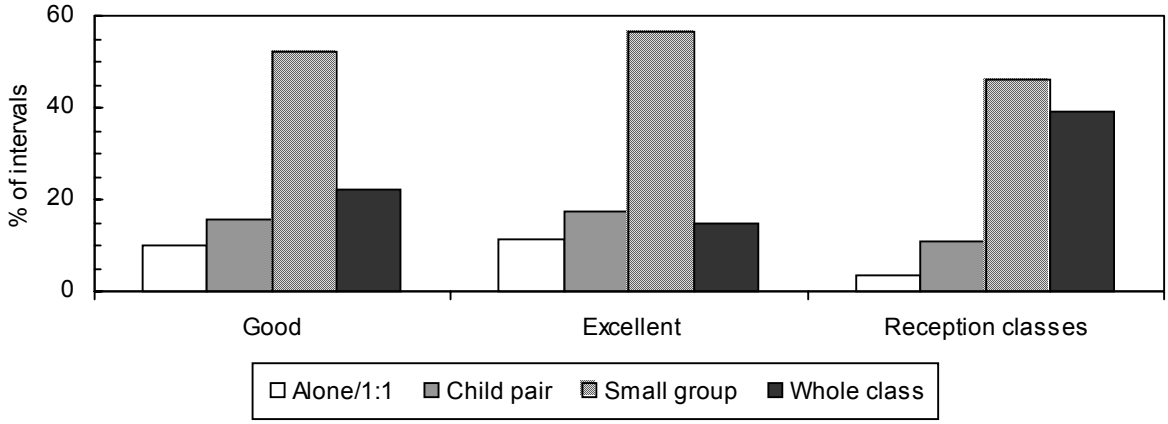
The *Open-framework provision* that we observed was intended to provide the practitioners with a pedagogic structure (or framework) that supported the child in their explorations and interactions with, and reflections upon, the learning activities and environments on offer. But in many of the settings, the involvement of staff in the programmed/focused group work left little time for scaffolding the child-initiated play. Only in setting 225 did we see a purely open-framework approach being practised. The curriculum classification was weaker in this case with the child having a good deal of freedom to make choices between the various exploratory learning environments that were provided. It may be significant that the setting manager informed us in the manager interview that they were dissatisfied with the balance that had been achieved between adult-led and child-initiated activities.

"25:75. 25 adult-led, 75 child-led. That's what we're aiming for the next year. I would say it's more like 15:85 at the moment which is too low". (225 Manager Interview)

This is a case study setting which is notable for its 2 poor cognitive outcomes. Despite extremely positive Social/Behavioural outcomes, the setting was rated at -2 for both *Pre-reading* and *Language Significance*. Plans developed for each child were produced through a collaborative process involving team members. In order to do this, two children were targeted for observation from each group each morning and afternoon through consultations with the key workers. The intention was to focus on the individual child's level of involvement and plan accordingly rather than to provide any list of skills. Extensive records were also kept on each child.

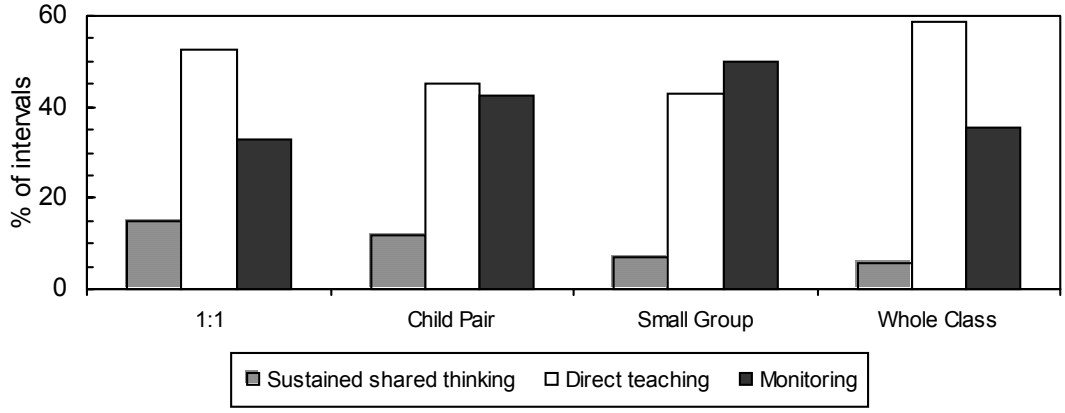
The systematic timed observations made distinctions between the size of group of which the target child was a part. These were: child working 'alone' or 1:1 with a member of staff, a child pair, small group (3-8 children), and whole class groupings (9 or more children). The group size that was observed the most frequently through all setting types was small group. Figure 12 below shows the different social groupings of children in good ('effective'), excellent ('highly effective') and reception class settings. As can be seen, children in excellent settings when compared with the other settings spent the highest proportions of their time in alone / one-to-one, paired and small group situations. Children in excellent settings also spent the least amounts of time in whole class situations while children in reception classes spent the greatest proportion of their time in whole class settings.

Figure 12: Time spent by children in different social groupings across settings of varying effectiveness



As children in all settings spent the greatest proportion of their time in small groups, the highest numbers of sustained shared thinking, direct teaching and monitoring interactions occurred in this social setting. However when you consider the proportions of pedagogical interactions which occur within each social grouping individually, a different pattern emerges (figure 13). When children are engaged in one-to-one and child paired groups, the highest incidence of 'sustained shared thinking' is recorded, showing us that 1:1 and 1:2 groups allow and encourage sustained shared thinking. It is therefore important to recognise that when adults manage to find time to talk to children individually or in child pairs; then these interactions are likely to be the most 'stretching' interactions. However, because 1:1 and 1:2 do not occur often, the absolute number of shared interactions is not high. Figure 13 also shows the important role of 'direct teaching' within each social group.

Figure 13: Proportion of cognitive and monitoring pedagogical interactions occurring within different social groupings

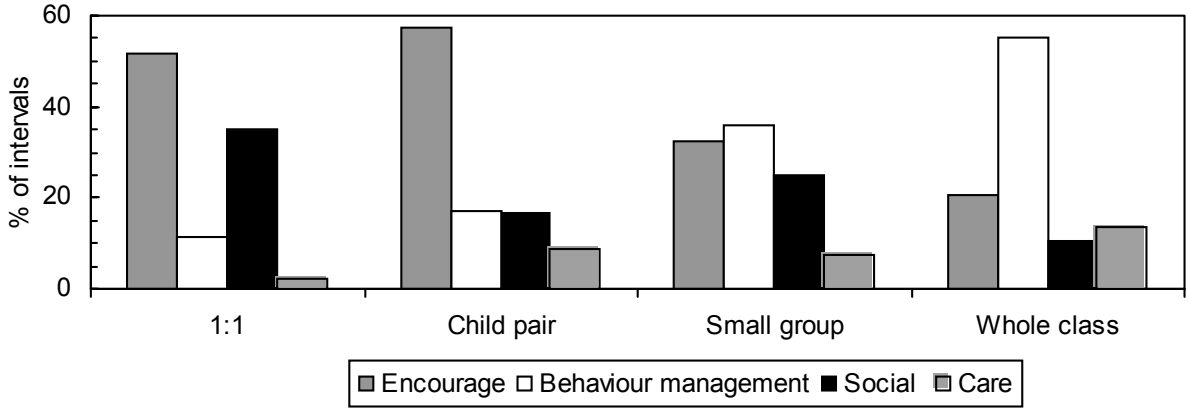


All curricular areas except literacy are experienced primarily in small groups. Literacy, however, occurs mainly in a whole class setting (47% of literacy occurs in whole class settings).

When in differently sized groups the types of social pedagogical interactions which practitioners engage in varied (figure 14). A higher proportion of encouragement occurred in one-to-one interactions and in paired settings, while the lowest amount of encouragement was found when children were in a whole class situation. Not surprisingly the amount of behaviour management and reprimands increased as the

size of the group increased, with the least reprimands in one-to-one, and the most in whole class groupings.

Figure 14: Proportion of social pedagogical interactions occurring within different social groupings



Both high challenge and low-medium challenge episodes were most frequently observed and experienced by the child in small groups, because children spent the majority of their time in small groups.

When considering each size of group individually for the level of challenge which occurs, it can be seen that if a child was alone, 1:1 with a practitioner, or in a child pair (with or without a practitioner) they were more likely to experience more high challenge episodes than they would if they were in a larger group (figure 15).

Figure 15: Levels of cognitive challenge experienced in different social groupings

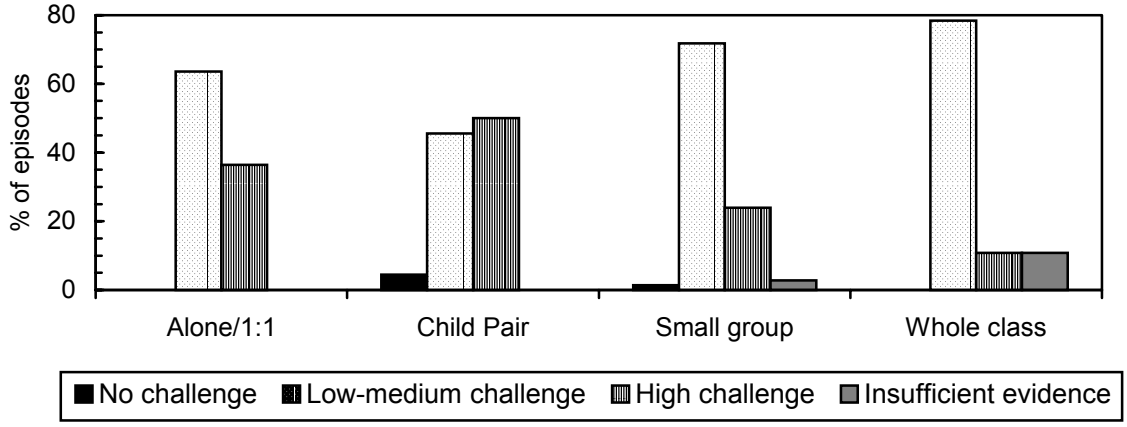


Figure 16 reveals that children were interacting with either children or adults for about 70% of their time whilst experiencing all areas of the curriculum. The one startling difference occurred during the time which children experienced literacy when they spent just under half of their time interacting. This is most likely to be due to the large amounts of time children spent listening to staff read books.

Figure 16: Levels of child interaction within curricular areas

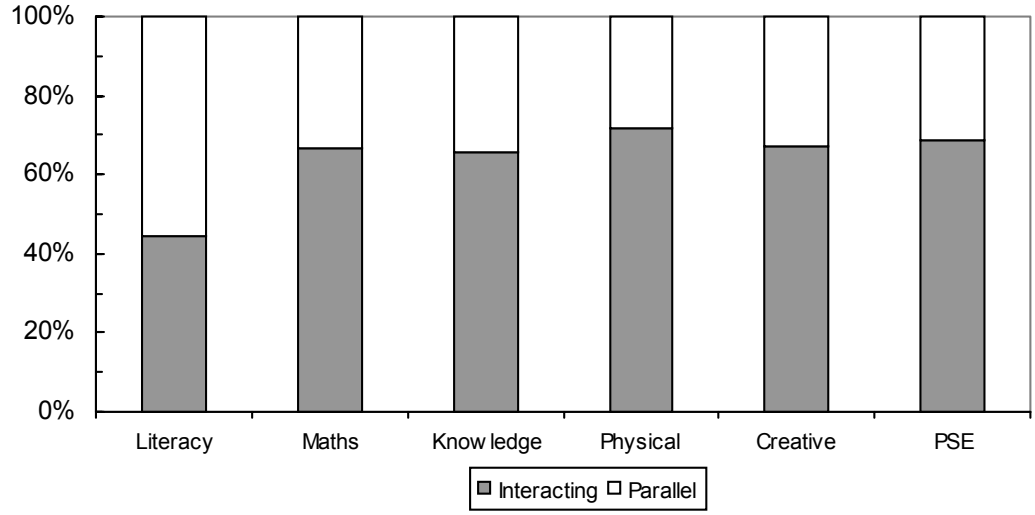
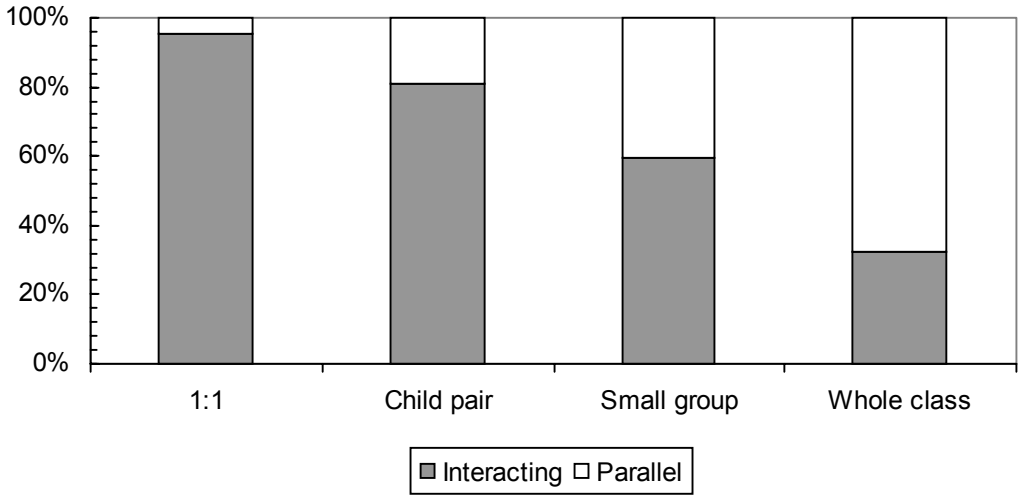


Figure 17 shows the pattern of time children spend interacting or not interacting and in parallel (unison) behaviours when in different group sizes. It is not surprising to see that children who are 1:1 with a member of staff spend the most time interacting and not in 'unison' behaviours, while at the other end of the spectrum, children in whole class situations spend the majority of their time not interacting and in 'unison' behaviours.

Figure 17: Levels of child interaction within different group sizes



4.8 Diversity and Differentiation

Citing a wide range of evidence, Sadler, 1989, Askew et al, 1997, Medwell et al, 1998, Black and William, 1998, Gipps et al 2000, have all recently argued that assessment and the provision of feedback to learners, are especially important educational strategies.

It is therefore unsurprising to note that a significant correlation found in the EPPE study was between the ECERS-E sub-scale for diversity and children's progress in pre-reading, early number concepts and picture similarities. The diversity sub-scale includes items on differentiation, observation, individual record keeping, gender and race equality and ability grouping, and while any association with the latter in the qualitative data proved to be unclear, a good deal of our qualitative evidence

confirms the importance of the formative assessment of children's learning. A few examples illustrate how this works in practice:

10.54am (TEACHER 1 re-focused on GIRL 1 (3:1). They both worked on the puzzle together)
TEACHER 1- Where's the goose going to go? (As she gave her each piece)
TEACHER 1- Good girl GIRL 1 (3:1), you're quick at puzzles aren't you?
TEACHER 1- I'm going to play with BOY 2 (3:5) now- show me when you're finished
(TEACHER 1 left the table but GIRL 1 (3:1) followed her)
(TEACHER 1 then decided to stay with GIRL 1 (3:1)
[TEACHER 1 realised that due to her present situation she should spend more one to one time with GIRL 1 (3:1) and record what had been happening. Staff are frequently encouraged to record the behaviour of children that they have any concerns about] (Document '214 obs 7')

…I try to balance out what I do in terms of observation because a lot of the time I'm interacting with them and unfortunately I don't think I have a very good memory, a little filing system. I tend to have a clipboard with me all the time where I can scribble things down. In fact I use a sticky labels. So I can just write down the observation and stick it onto a sheet without re-writing it. If it requires too much work then it doesn't get done. That's my record for me. It doesn't need to be on computer for me, it's just for me to refer to later on. I do an awful lot of that. I might be making observations whilst I'm interacting or I might sometimes just try and sit and watch. I find that really hard to do because children always want you to be involved. But sometimes I just like to (if I can) just step back and see how they are without an adult there to get some insights. I think even from the point of view of choosing your topic that should be based on observations. I don't think you should just pluck them out of a hat.
(Document '214 int teach')

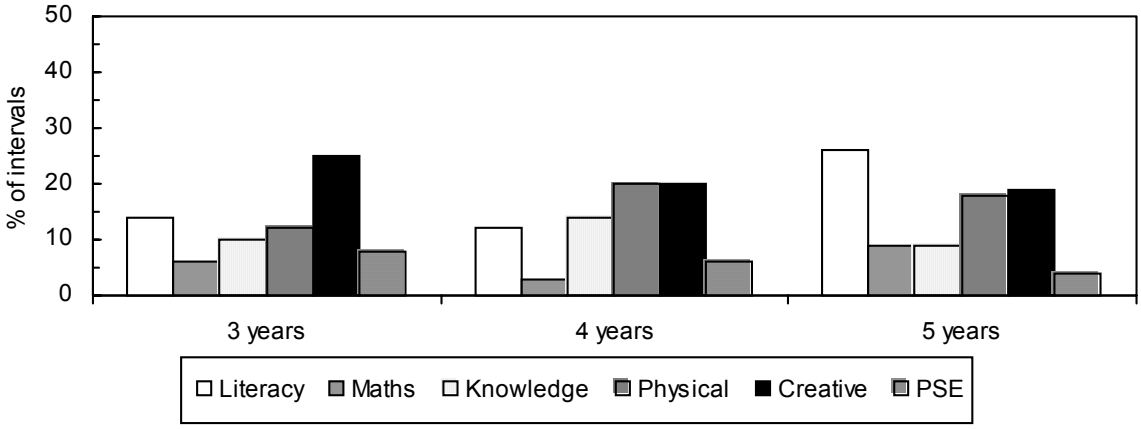
The recent OfSTED (2000) report noted that detailed records and photographic evidence are used effectively to re-visit experiences to clarify, deepen and strengthen understanding. Activities are meaningful and children are therefore highly motivated. It is also noted that the nursery nurses make a significant contribution to the quality of teaching in the centre. (Document '421 doc')

The systematic observations focused on children from three categories: 'highly capable' learners, children learning 'as expected', and those who were 'struggling' to learn. The main difference in how children of different abilities experienced the curriculum was found in those children who were 'struggling' to learn' experienced double the amount of Personal and Social Education (PSE) than 'highly capable learners'.

4.9 Curriculum – content and balance

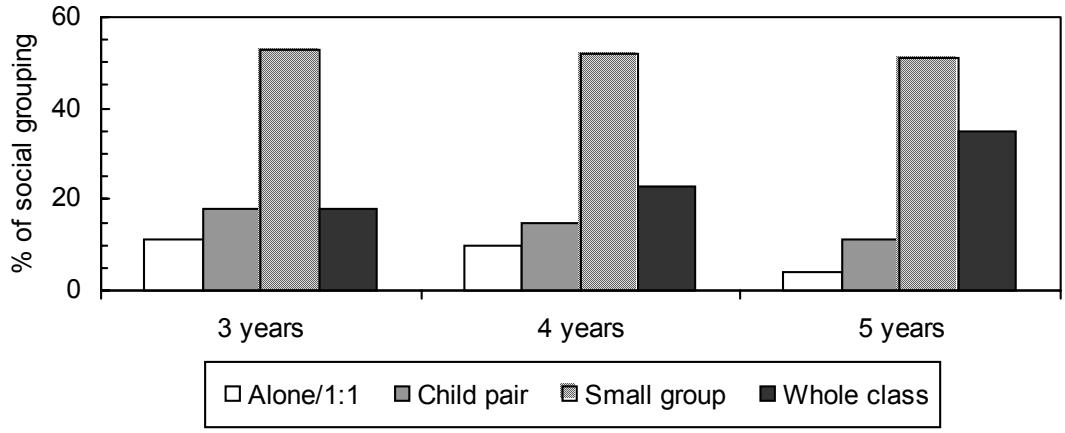
The curriculum 'diet' is dependent on the child's age (figure 18). The younger children (three-year-olds) receive more creative development and PSE, while the amount of literacy and maths children experience almost doubles between three and five-year-olds, which is perhaps unsurprising as the majority of the five-year-olds in the sample were in reception classes hence experiencing the Literacy Hour and daily mathematics lesson. The gradual decline of PSE as children grow older attests to the high importance practitioners give to establishing rules and routines for the youngest children. What is striking is the fact that in the two case study reception classes the physical and creative areas of the curriculum remain relatively high. In other words, the reception classes in this study have a firm 'academic' curriculum which they balance with a strong emphasis on creative and physical development.

Figure 18: Children's experience of the curriculum according to age



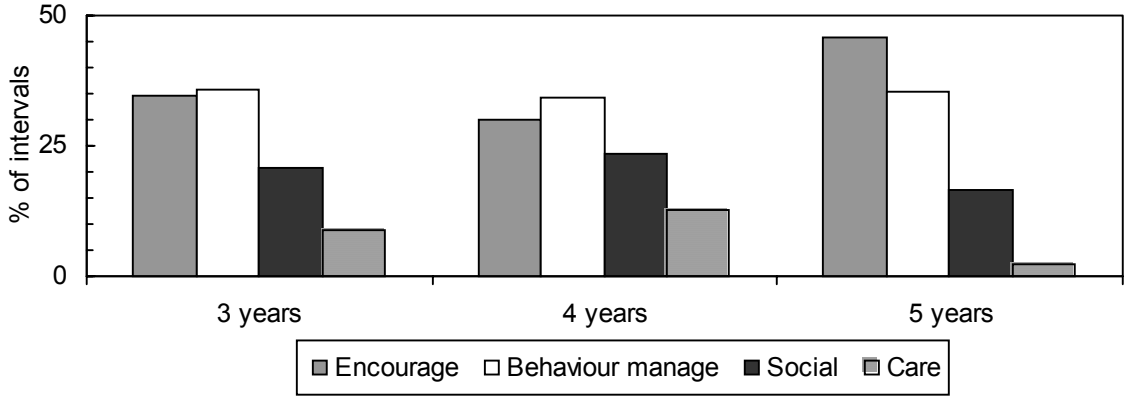
The group size that was observed the most frequently through all setting types is small group which is shown clearly in figure 19. The largest difference between the age groups is that five-year-old children (the majority of whom were observed in the two reception classes) spent a much higher proportion of their time in whole class groups than younger children.

Figure 19: Children's social grouping by age



When the pedagogical interactions which children received were investigated for possible age effects no differences in the proportion of cognitive pedagogical interaction which were found. However, the amount of social pedagogical interactions children experienced does differ according to age (Figure 20). Older children (five-year-olds) received more encouragement and less physical caring than 3 and 4 year olds. In our whole sample of effective settings, these informal rules (e.g. 'share', 'don't disrupt') are given a lot of time for young children but the older children no longer needed as much time devoted to them, or needed as much physical caring.

Figure 20: Social pedagogical interactions by age



Children of different abilities appeared to have the same kinds of cognitive interactions with the staff. However, when considering the occurrence of social pedagogical interactions, a different picture emerges for children of different abilities (figure 21). Children who are 'struggling' learners receive the most behaviour management interactions from adults, while very capable learners and those who are learning 'as expected' receive more social talk and caring interactions from the adults in their settings.

Figure 21: Proportion of social pedagogical interactions according to child ability

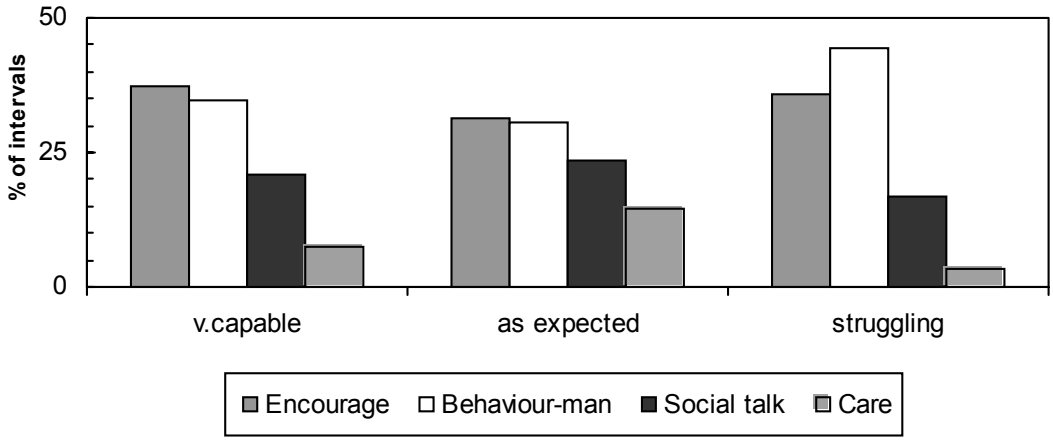


Figure 22 shows the overall amounts of time children in reception classes and the preschool settings were engaged in different curricular areas. Observations revealed large differences in the way in which staff plan learning experiences across the six areas of the Foundation Stage. The daily routines and provision of materials which settings establish emphasise some areas of the curriculum more than others and these priorities are, in all the case study settings, the consequence of deliberate choice. These choices have resulted in a different balance of curricular 'coverage' in excellent as compared to good settings.

Figure 22: Curricular balance across types of provision

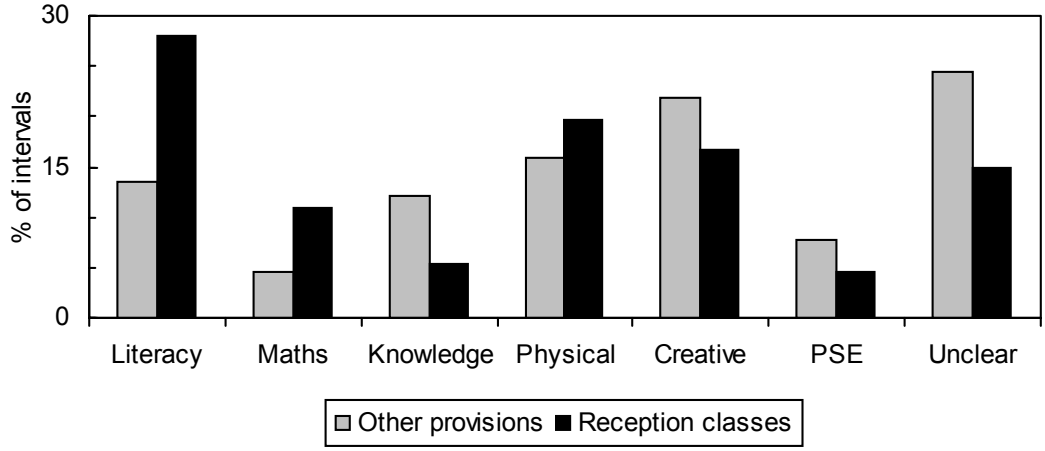
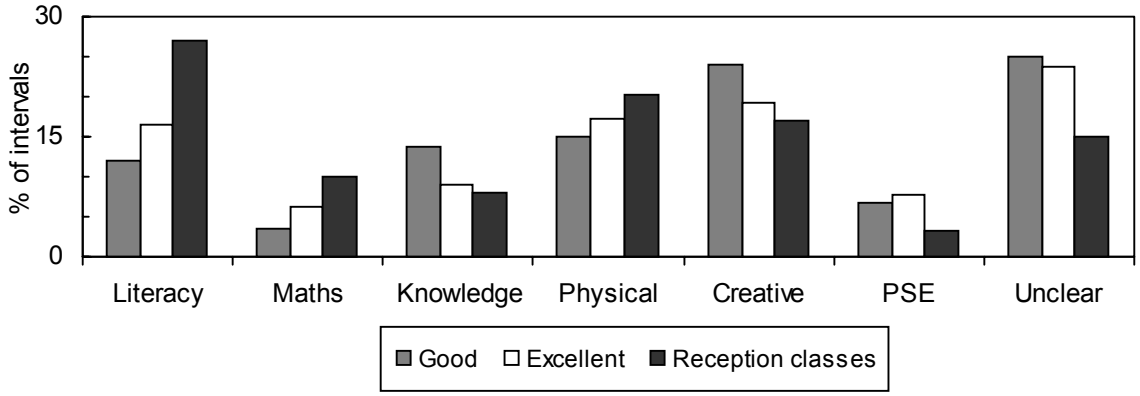


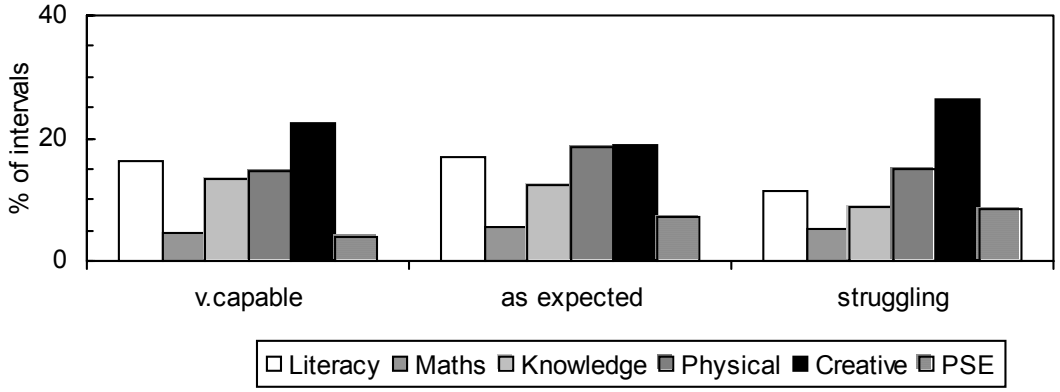
Figure 23 shows that children in the excellent settings experienced a greater proportion of literacy, mathematics and physical development activities when compared to the good settings. This makes the excellent settings more like Reception Classes in placing the emphasis of their curricular balance in these three curricular domains, the only difference was that excellent settings had the highest proportion of PSE of all. However, the price for having more literacy, mathematics, physical development and PSE meant that children in excellent settings experienced less knowledge and understanding of the world and less creative development related activities.

Figure 23: Children's experienced curriculum in Reception classes and other settings



The curriculum balance was also varied for children who were considered to be of different ability (figure 24). Children who were described by their teachers as 'struggling to learn' experienced more creative and PSE aspects of the curriculum and less literacy and knowledge and understanding of the world. Children described as 'very capable' and learning 'as expected' experienced about the same amounts of literacy, mathematics and knowledge and understanding of the world. However, the biggest differences between different abilities lies in the amounts of creative activities experienced, with the 'struggling' learners spending much more time on creative activities and less time on knowledge and understanding of the world.

Figure 24: Children's experienced curriculum by ability level



When children were engaged in different areas of the curriculum they were involved in different activities; this is illustrated in table 2 below. For knowledge and understanding of the world, physical development and PSE the main vehicle for learning was child-initiated play rather than adult-initiated activity. For example while

experiencing knowledge of the world, physical and creative development, children were most often observed in pretend play, manipulating objects/materials and large muscle play. However when experiencing the literacy and mathematics areas of the curriculum, the main vehicles for children's learning were the more structured activities often led by staff.

Table 2: Children's most common learning activities while experiencing different curricular areas

Curriculum experienced	Most common child activity				
	1st	2nd	3rd	4th	5th
Literacy	Listen to teacher read	Look at books	Read sounds	Staff-led unison activity	Write copy
Maths	'Doing' calculations	Number concepts	Staff-led unison activity	Reading/writing maths symbols	Task related observations
Knowledge	Manipulation	Staff-led unison activity	Small scale construction	Examination	Large scale construction
Physical	Large muscle movement	Manipulation	Structured materials	Informal games	Art cut & paste
Creative	Pretend	Art Draw	Art paint	Adult directed art & manipulation	Sing songs
PSE	Scale version toys	Staff-led unison activity	Domestic activity	Social talk	Art draw

As shown earlier in this report, Foundation Stage children spend most of their time in small groups. Figure 25 shows that this is true for five of the six areas of the curriculum. The only, and most obvious, exception to this is the way in which literacy is experienced – the majority of the time children engage in literacy in whole class contexts where they are often listening to adults read. This figure also shows how rarely literacy is experienced when the child is alone, 1:1 with a teacher, or in a child pair.

Figure 25: Children's experienced curriculum by social grouping

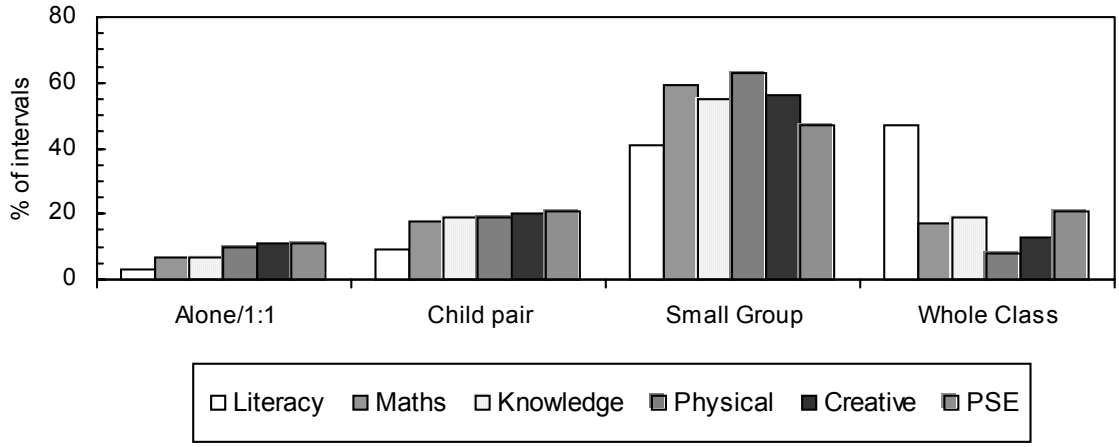
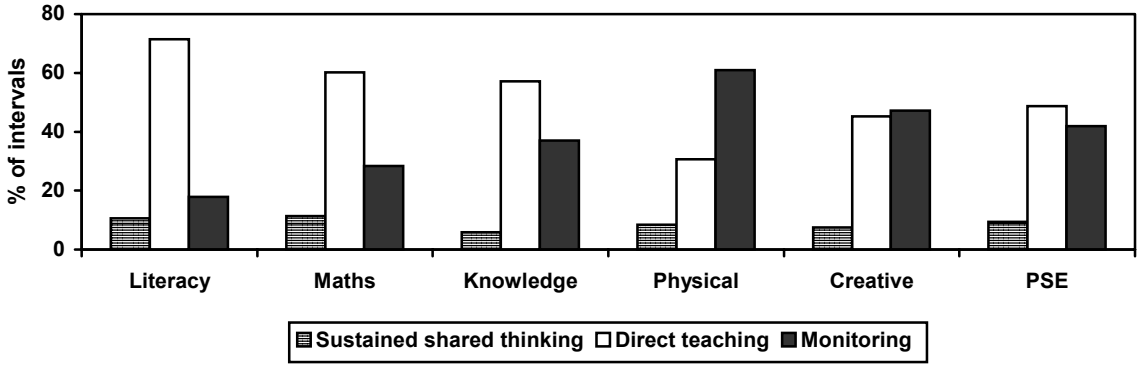


Figure 26 shows the divergent ways in which practitioners interact with children according to the different areas of the curriculum. While experiencing physical development and creative development, adults used more monitoring interactions, which suggests that practitioners were 'taking a step back' and allowing children to be independent learners in these areas of the curriculum. When contrasted with literacy and mathematics, the converse can be seen when the majority of interactions

on the part of adults were sustained shared thinking and direct teaching. This reveals a more 'active' role for the practitioner in these curricular domains.

Figure 26: Cognitive pedagogical interactions which occur different curriculum areas



4.10 Pedagogic Subject Knowledge

While 'sustained shared thinking' may be considered a necessary pre-requisite for excellent pedagogy in the early years; our analysis also shows that on its own it may be insufficient. We found examples of practitioners whose knowledge and understanding of the particular curriculum area being addressed was inadequate and this led to missed opportunities or uncertain outcomes, and this was particularly the case for the direct teaching of phonics.

It is generally recognised that different pedagogic techniques are required for the effective learning of different forms of knowledge, skills and understanding (Siraj-Blatchford, 1999) and in teacher education, this is often referred to as 'pedagogical content knowledge' (Shulman, 1986); *the way we make the knowledge accessible and understood to others (the children).*

The observations that we recorded of directed phonics work were very mixed. A variety of strategies are applied, for example, one observation from setting 017 NC, which the EPPE analysis shows is currently underachieving in terms of developing pre-reading skills, showed little challenge being provided.

In most of the settings, letter sounds are routinely identified but the evidence that we have collected suggests that this in itself is insufficient when it comes to the development of good pre-reading outcomes. The most sophisticated phonics work that we observed was carried out in the reception classes where longer periods are devoted to the activity, but even here the teacher's subject knowledge in this area appeared to be quite limited at times.

The following example illustrates some of the problems that we observed:

Example 1: Phonics

BOY 4, BOY 3 and BOY 5 sit at the table and BOY 4 and BOY 5 fight for a seat.
NURSERY OFFICER 1 - Today we're going to play a game where you have to find a word and the picture".
BOY 4 "I can do that, I did that this morning at home"
NURSERY OFFICER 1-"Now, we must remember to only find our own words, not anyone else's, okay".

BOY 4. "I know everything"
NURSERY OFFICER 1 "Right BOY 3, you start can you find the word tap".
10.45am He picks the word "net"
NURSERY OFFICER 1- "Is that tap?"
BOY 3- "Yes" N. O. "Lets have a look at the word".
NURSERY OFFICER 1- What letter does tap begin with?"
BOY 3 /t/ "good, what's this letter points to an 'n' (n in net)
BOY 3 says nothing.
NURSERY OFFICER 1- "What's wrong with that letter?" What is that letter".
BOY 4 wants to join in.
NURSERY OFFICER 1 "Don't help BOY 4 unless he wants it".
BOY 3- "I want BOY 4 to help"
NURSERY OFFICER 1 "Okay BOY 4 can you help BOY 3 to find the word tap".
BOY 4 finds it quickly. NURSERY OFFICER 1- "Excellent BOY 4 well done".
10.55am BOY 4 and BOY 5 both have a turn "Oh you boys are too clever for this game" (BOY 3 is struggling).
NURSERY OFFICER 1 - "I'm going to spread the cards out in the middle. BOY 3 can you find the word sat". (BOY 3 reaches for BOY 5).
NURSERY OFFICER 1- "Well done BOY 3 what goes next
BOY 3 /a/.
NURSERY OFFICER 1- And what's the last letter (keeps repeating 'sat')
BOY 3- "I need help"
NURSERY OFFICER 1- "You need help, BOY 4 can you help BOY 3 to find the last letter in sat) BOY 4 finds 't' "Well done boys".
(The same game is repeated with each child. BOY 5 attempts to spell Pin. He gets /p/ and /n/ but cannot get /i/.
NURSERY OFFICER 1 keeps repeating the word 'pin' and asking him what letter goes in the middle. [She does not break the word down into letter sounds.]
BOY 4 says /i/.
NURSERY OFFICER 1 "i well done, it's 'i' isn't it BOY 5?"
After going to the other 2 she then goes back to BOY 5 to spell out his word with the letters in front of him - he struggles with this. (306 PDN obs 3)

There were a number of pedagogic problems with this task:

- The task was completely decontextualised from the children's experience e.g. not related to their names, or words in a story.
- The N.O. seems to think that reading requires letter identification and doesn't seem to understand the letters aren't phonemes… nor that hearing the sounds in sequence is a difficult task and that middle vowels are the hardest.
- It might have been better if she had understood about onset/rime.
- What governs her teaching? Why is she teaching these letters? Is there any order to the letters taught? These were not part of her planning.
- The N.O. has poor subject-knowledge – she thinks that after recognising 'whole words' the children need to learn the letters in the word.
- She doesn't ever TELL or teach the child – it's as though she's testing all the time, never telling the child why that letter says /t/ or T. Testing is not teaching.
- There is no 'modelling' here.

(We are grateful to Angela Hobsbaum for her assistance in the analysis of this example))

There were other examples of practitioners whose knowledge and understanding of the particular curriculum area under study was inadequate leading to missed opportunities or uncertain outcomes. Two notable examples may be taken from

mathematics and science and from design and technology. In both cases the focused group work was of low quality: In the first example because the practitioner appeared to have little understanding of the importance of *explanation* in science and, in the second example, little understanding of the importance of *evaluation*, a key concept in design and technology.

Example 2: Mathematics
In a 20 minute structured maths activity NURSERY OFFICER 1 (306 PDN) attempted to introduce a group of 4 children to the concepts of addition and subtraction symbols that are used in mathematics. She explained to the observer that she would not be teaching them to add or subtract but simply to recognise the symbols. The CHILDREN were seated at a mathematics table. NURSERY OFFICER 1 explained that they were to look at the signs that are used in mathematics. She began by showing the CHILDREN an equal sign and told them what it was called. She then did the same with 'take away' and 'add'.

BOY 1 (3:5) says "to get some more"
[He looks unsure of his answer - although NURSERY OFFICER 1 says "to get some more" she does not praise him].
NURSERY OFFICER 1 demonstrates addition using the add and equal sign and counting teddy bears. NURSERY OFFICER 1 demonstrates 1 tedd - 1 tedd = 1 tedd!!
BOY 2 (4:0) says " 1. ".
NURSERY OFFICER 1: "1 well done, that's a really hard concept to understand"
[Despite the fact that she is using Teddy bears as concrete objects she is not demonstrating but is rote talking them through the task. They are capable of counting but remain unclear about what adding and taking away are].
2 CHILDREN use smaller sums and 2 other CHILDREN use larger sums.
One CHILD GIRL 1 (4:5) gets up and leaves, this distracts all the others and GIRL 2 (3:8) wishes to leave and BOY 2 (4:0) and BOY 1 (3:5) want to go out.
[GIRL 2 (3:8) does the sum 1-1=1 again so it was not a mistake]
BOY 2 (4:0) who is at a slightly higher level does 2-1=2
The CHILDREN prepare to go out.

NURSERY OFFICER 1 later explained that the activity had come about because they had observed many of the able older CHILDREN adding teddy counters. Approx. 5 were felt to be capable of this:

NURSERY OFFICER 1 "BOY 2 (4:0) put 3 and then 2 counters together and said 'That's five'. He visually counted them and we were like 'wow!' We hadn't even thought of doing that with them".

She said they were not intending to teach them to add up or anything but simply to introduce them to the fact that there are signs in mathematics which can be used. The staff were going to 'see how it went' with the older CHILDREN and see if their interest in it was maintained. She described how she felt that a lot of them lost interest and that she had worked hard to maintain their interest as they wanted to go out. She felt that they were very able and that as it was the first time working on this then perhaps they would come back to it again as they obviously needed to be moved on to this stage. Many references were made about how bright the CHILDREN were and it was suggested that they had to present the work at this level: "We feel we don't put as much work into the maths as we do the literacy as that is a set scheme…we need to keep on top of the maths with the older more able ones, this is why we have introduced a specific maths activity at 2.00 pm every day".
(306 Critical Episode 1)

Example 3: Science - floating and sinking

APPARATUS: Large container of water; container of different objects; work sheet; A4 sheet of paper; pencil; list of children's names.

1.28 Stands at door and calls 6 CHILDREN to her: BOY 1 (3:9), GIRL 1E (3:2), GIRL 2E (4:4), GIRL 7E (3:6), BOY 3E (3:10), GIRL 3 (3:7).

She takes them into cloakroom. Sits in front of large container of water. CHILDREN stand around container. NURSERY OFFICER 1 "Do you remember this sheet from yesterday?"

Holds up work sheet (attached to HELPER's first observation) CHILDREN nod or say "Yes"

Pointing to relevant parts, "It's got a bucket of water. We've got some water here. We'll put some of these things into the water and see if they float or sink."

Puts down sheet and picks up pencil and A4 paper, "I'll draw 2 columns and then we can write if they go down to the bottom. What's the word?"

BOY 1 (3:9) "Sink" She writes Sink at the top of first column.

NURSERY OFFICER 1. "Yes, sink...or if they stay on top of the water. What's the word?"

BOY 1 (3:9) "Float." She writes Float at top of second column.

She takes a coin from the container at her feet and shows it to the CHILDREN.

"The first thing is.....?"

CHILDREN say "Money"

"Yes, money...a coin. When I put it into the water, will it sink or float?"

"What do you think GIRL 4 (3:6)?

She asks each CHILD in turn to predict what will happen. Then puts the coin into the water "What happened?"

Process is repeated with a plastic and metal spoon, a wax crayon, a stone, a plastic car - which she also tries upside down and filled with water; it floats both ways "It still floats. Mmm." - a nail and a twig.

"The last thing is a plastic cup." She puts it into the water and it floats. "Shall I fill it up with water and see if it still floats?"

CHILDREN say "Yes". She fills the cup with water.

CHILDREN say "Floats."

1.40 NURSERY OFFICER 1 "Which things sank to the bottom? Look and see."

CHILDREN call out items. When they say "Spoon" NURSERY OFFICER 1 corrects them "Metal spoon."

"Which ones floated?" Again CHILDREN call out items…..

(401 PG observation 1)

The session ended with the Nursery Officer asking the CHILDREN to list the things which sank, and then the things which floated. No attempt was made to identify the reasons that the children had for making their predictions or to engage in any way with those reasons. The activity failed to provide an investigative or exploratory model and the opportunity to develop the children's understanding of floating and sinking was also missed.

Example 4: Design and technology

EQUIPMENT: variety of 'junk' materials; glue.

9.05 BOY 1 (4:2), GIRL 4 (3:5), GIRL 5 (3:3), GIRL 6 (3:9) and GIRL 7 (4:1) are standing beside the 'craft' table.

TEACHER 1 "We've got a big job to do with these boxes. We've got to change them into something. Have a think. You could change them into a car, a castle, a train, a house..... Roll up your sleeves..... There are lots of different bits - shiny bits for lights..... Use the sticky glue to stick the things together. Start with a big box..... If you find the bits hard to stick on, let me know 'cos I've got

special tape..... but try sticking first. I'll put some soapy water in a bowl in the sink for washing sticky hands."

(417 NC observation 3)

Throughout the activity, the children freely changed their intentions as they experience difficulties in realising their objectives. No attempt was given to provide any support to overcome these difficulties so that they could realise their initial design intentions. All the children's finished products were given equal praise and the only criteria for completion that was applied was that when each child wished to finish with the activity, they were required to show that everything that was intended to have been *stuck* was indeed securely *stuck*.

The following extract of a 20 minute science lesson involving eight 4 year-olds shows how a choice of developmentally inappropriate pedagogy and content may also be problematic.

Example 5: Science
1.15pm TEACHER X- What area of science did we cover last week?
CHILD 1- The skeleton
TEACHER X- What is the name of it?
CHILD 2- Biology
TEACHER X- This week we are going to be looking at Zoology
TEACHER X- A zoologist is a person who studies animals
TEACHER X- What does a zoologist study?
CHILD 1- Animals
TEACHER X- A biologist studies?
CHILD 3- Animals
TEACHER X read from a book about zoology
TEACHER X- What's the backbone called CHILD 3?
CHILD 3 - Th- The spine
TEACHER X- Animals with a backbone are called vertebrates
(Repeated this and the children followed)
TEACHER X- I need you to know that animals with backbones are vertebrates, animals without backbones are called invertebrates.
TEACHER X- CHILD 4, an animal without a backbone is called a…?
CHILD 4- Reptile
TEACHER X- No, a vertebrate
TEACHER X- I've got some things for you to have a look at and then we're going to put them into categories
1.20pm TEACHER X- Do you think crocodiles have got a backbone?
CHILD 3- A backbone
TEACHER X- What kind of animals are they?
CHILD 3- Vertebrates
(All children invited to look at a poster of vertebrate/invertebrate)
TEACHER X- We are going to look at the different groups these animals fall into
TEACHER X- We're going to talk about mammals
CHILD 4- It's like a reindeer
TEACHER X- Yes it is, but what's the difference between a reindeer and a starfish?
CHILD 4- It's like a star
CHILD 3- The reindeer is a vertebrate
TEACHER X- The female mammal feeds the baby with their own milk. This makes the mammal special
TEACHER X- What else feeds with it's own milk?
CHILD 5- Cows
CHILD 3- Tigers

TEACHER X- What are we called? Are we mammals?
CHILD 1- No
TEACHER X- Why CHILD 3?
CHILD 3- No we are. We have a backbone
TEACHER X- Did Mummy feed you?
TEACHER X- What with?
CHILD 1- Cows
TEACHER X- No, breast
CHILD 3- And very good it was too
TEACHER X- Do you understand the difference between a mammal and an arthropod
CHILD 4- Yes
TEACHER X- How?
CHILD 4- Size, mammals have a backbone and feed milk
CHILD 3- To their babies
1.27pm TEACHER X- Then some mammals have got hair. Have a look at your arms. Can you see any hairs?
CHILD 5- My daddy has got hairs like this
TEACHER X- Males tend to have more hair than the females

1.30pm PARENT 1 came in to collect a child who was sick, TEACHER X dealt with it while the rest of the children waited
1.32pm TEACHER X- Now then, let's have a look at different mammals
CHILD 4- My Daddy's got hair covering his eyes
TEACHER X- What so he can't see?
CHILD 4- Yes, bump, bump, bump
TEACHER X- I want you to concentrate on the difference between a mammal and an arthropod
TEACHER X- I've got some insects here
CHILD 4- They're not real
TEACHER X- Are they mammals?
CHILD 3- Yes because they give milk
TEACHER X- I've never seen a ladybird give milk
CHILD 4- No, it's not a mammal
1.35pm TEACHER X- No, it's an arthropod, can you say that?
CHILD 1- Arthropod
TEACHER X- CHILD 6 important thing to remember is that it's body is divided into sections (Shows a ladybird etc)
TEACHER X- Look carefully and tell me what these insects have in common. What do they all have the same of?
CHILD 6- Legs
TEACHER X- How many legs?
CHILD 3- five
TEACHER X- Count again
CHILD 4- six
(Puts them in a container, each child wants to see how many legs they've got)
TEACHER X- So what have all the insects got in common?
CHILD 1- six legs
TEACHER X- Are they mammals?
CHILD 1- No
TEACHER X- They don't have hair or give milk to their babies
*1.45pm TEACHER X- I've made some sheets up for you (*shows to class)*
TEACHER X- Something else I forgot to tell you, mammals are warm-blooded. If you cut yourself the blood that comes out is…?
CHILD 4- Cold

TEACHER X- Is it?
CHILD 3- No warm
TEACHER X- Now remember I said that arthropods have different parts to their body. How may legs?
CHILD 1- Six
CHILD 7 exceptionally vocal
1.55pm TEACHER X- Tomorrow we are going to look at where mammals and arthropods live
TEACHER X- What are we going to do tomorrow?
CHILD 3- Look at where they live

(219 PDN obs 12)

By contrast the following example shows good knowledge of the curriculum area *knowledge and understanding of the world*, and good pedagogy, especially the modelling of language and extending vocabulary. It also provides for PSE, 'caring for living creatures'.

Example 6: Science
ADULT'S INTENTION:
"I found some slugs and snails in my garden yesterday. We did mini-beasts last term but some of these snails are really small and I thought the CHILDREN might like to draw them outside in the garden".

9.30 TEACHER 1 unlocks the outside door and takes a tray, containing the snails, and a box of magnifying glasses outside. She sits at the picnic table and is joined by GIRL 1E (4:8), BOY 1E (4:8), BOY 2E (4:5) (seated on a tricycle), BOY 3 (4:4), BOY 4 (4:0) and BOY 5 (4:2).
TEACHER 1 "Have you seen how tiny they are? ..... Some are very small..... [The CHILDREN try hands on experience!] Be careful. Don't squash the little ones."
BOY 1E (4:8) "I've got some at home."
TEACHER 1 "Where?"
BOY 1E (4:8)"By my windows."
TEACHER 1 "I brought these from my garden .... (Pointing to a slug) do you know what these are? It's like a snail but it hasn't got a shell."
GIRL 1E (4:8) "It's a snail."
TEACHER 1 " Its body is like a snail's but it hasn't got a shell."
BOY 1E (4:8)"A worm."
TEACHER 1 "I don't think worms have antennae."
BOY 1E (4:8)"What is it?"
TEACHER 1 "It's a slug."
BOY 2E (4:5) "Come on."
BOY 5 (4:2) and BOY 4 (4:0) leave to play on the bikes.
BOY 1E (4:8)has trapped a slug in a specimen container.
TEACHER 1 "The slug has crawled into a special pot."
BOY 1E (4:8)"Quick! I need a lid."
TEACHER 1 "I don't think you need to keep them in the pot. They can stay in the tray."
BOY 3 (4:4) "Ow! I touched a snail."
TEACHER 1 "Its eating that leaf.... They seem to like these Hosta leaves particularly..... The ones in my garden are always covered in holes where the slugs and snails have eaten them.....Notice how it uses its antennae..... Every time it touches something it pulls its antennae in."
9.35 BOY 3 (4:4) leaves the table and GIRL 2 (4:9) joins the group.
9.36 TEACHER 1 leaves the table to sort out a dispute between BOY 3 (4:4) and BOY 4 (4:0) over a bike. She brings BOY 3 (4:4) back to the table.

GIRL 2 (4:9) elbowing her way to sit beside GIRL 1E (4:8), "I want to see the baby ones."
TEACHER 1 seated again, gives GIRL 2 (4:9) a magnifying glass.
GIRL 2 (4:9), using the magnifying glass "Big and fat. This shell is big."
GIRL 2 (4:9) touches a snail which begins to crawl across the tray. She screams loudly and GIRL 1E (4:8) joins in.
TEACHER 1 "Don't make a loud noise..... I wonder can snails hear? They'll think you're very noisy."
The girls stop screaming.

9.40 BOY 3 (4:4) picks up a snail. It's attached to a leaf. "He's just sticked (sic)."
GIRL 2 (4:9) has been banging a snail's shell with the edge of the magnifying glass.
GIRL 1E (4:8) "She's broke his shell."
TEACHER 1 "Who did?"
GIRL 1E (4:8) "GIRL 2 (4:9). She banged it."
TEACHER 1 "Don't do that. You have to be gentle."
The boys on the bikes come near to the table. [They are roaring deafeningly!] TEACHER 1 "Go to the top of the hill if you want to make that noise."
They ride off.
GIRL 3 (4:4) joins the group. GIRL 4E (4:8) comes and takes a magnifying glass from the box. "I'm going to look at the trees."
TEACHER 1 "OK. Bring it back and put it in the basket when you've finished."
All of the magnifying glasses have black handles, except one smaller one which has a red handle. GIRL 1E (4:8) takes it out of the box.
GIRL 2 (4:9) "I want the little mirror."
TEACHER 1 "Magnifying glass."
GIRL 2 (4:9) "I want it."
TEACHER 1 "I might draw a picture .... Shall I get some paper?"
GIRL 2 (4:9), trying to grab the magnifying glass from GIRL 1E (4:8), "Me want it."
She begins to whine, "Want that one. Want the one."
9.48 TEACHER 1 "Excuse me GIRL 1E (4:8), could GIRL 2 (4:9) have that one for a minute? Then she'll see that it's just the same as the others."
GIRL 1E (4:8) gives GIRL 2 (4:9) the magnifying glass and leaves the table.
TEACHER 1 "I'll just go and get some paper and pencils."
She goes into NURSERY.
GIRL 3 (4:4), BOY 3 (4:4) and BOY 1E (4:8) continue to look at the snails and slugs. GIRL 2 (4:9) leaves the table (with the red-handled magnifying glass.)
NURSERY OFFICER 4 comes out into the garden.
BOY 1E (4:8) "NURSERY OFFICER 4 come and look."
NURSERY OFFICER 4 "Look at this one on the end of the leaf."
BOY 1E (4:8)"I throwed (sic) him down."
NURSERY OFFICER 4 "Oh that's not very kind really..... These are amazing BOY 1E (4:8). The way they're moving and stretching."
They continue to watch the slugs and snails. The CHILDREN use the magnifying glasses.
9.55 TEACHER 1 returns and NURSERY OFFICER 4 goes back into NURSERY. TEACHER 1 stands a 'big book' about snails on the table, she has also brought A4 paper, pencils and some clipboards.
GIRL 2 (4:9) rejoins the group and BOY 6 (4:6), who has just arrived, stands at the table.
TEACHER 1 "What happens when you look through the magnifying glass?"
BOY 1E (4:8)"They get bigger and bigger and bigger."
TEACHER 1 "They look bigger."
BOY 1E (4:8)"Yes."
GIRL 2 (4:9) is told not to bang the magnifying glass on the table.

TEACHER 1 to BOY 6 (4:6) "What do you think these are (pointing to the slugs)?"
BOY 6 (4:6) "Worms."
TEACHER 1 "They're very similar but these have antennae like snails ..... They're slugs."
BOY 6 (4:6) peers at them.
TEACHER 1 "How are you BOY 6 (4:6). I see you've brought an apple. Did mummy Parent 1 give it to you?"
He nods. Pointing to the tray, "What's that?"
TEACHER 1 "A piece of fruit for the slugs and snails. I thought they'd like to eat it but they really seem to like these Hosta leaves. I've got some in my garden and they always have holes in them."
BOY 1E (4:8)pointing to a snail, "That one's big."
TEACHER 1 "Which one's biggest?"
BOY 1E (4:8)"That one."
10.00 GIRL 2 (4:9) is banging the table again "Tidy up time in a minute."
TEACHER 1 "Tidy up time for snails? Not yet..... This one's very active. What are these called? ..... Do you remember? ..... No? .... Slugs."
…….
BOY 1E (4:8)"I want to draw a picture."
TEACHER 1 "I've brought some paper and clipboards."
She shows him how to put the paper under the clip.
GIRL 2 (4:9) "I want a paper like BOY 2E (4:8)."
TEACHER 1 fits a piece of paper under the clip for her.
GIRL 2 (4:9), holding a leaf, "I want to draw a tree."
TEACHER 1 "A tree or a leaf?"
GIRL 2 (4:9) "Leaf."
TEACHER 1 leaves the table to sort out a dispute over the bikes.
GIRL 2 (4:9) sings as she draws "Green leaf. Green leaf."
GIRL 3 (4:4) helps herself to a clipboard and puts a piece of paper under the clip. BOY 1E (4:8) announces he's drawn a slug "With eyes.... I want another piece of paper."
GIRL 3 (4:4) picks up a clean piece of paper and goes around the table to BOY 1E (4:8). She fits the paper under the clip for him.
TEACHER 1 returns.
BOY 3 (4:4) "I want to draw a snail."
TEACHER 1 passes him a piece of paper and a clipboard. BOY 3 (4:4) tries to put the paper under the clip. BOY 1E (4:8) tries to help him.
TEACHER 1 "You have to press hard. Watch your fingers. Do you want me to help?"
GIRL 3 (4:4) gets there first and puts the paper under the clip.
TEACHER 1 "Oh well done GIRL 3 (4:4)."
10.10 TEACHER 1 has to leave the table again to settle another dispute over the bikes.
As she returns to the table, NURSERY OFFICER 3 (NO) comes out into the garden.
TEACHER 1 "I could do with another person out here. This is quite intensive work and I have to keep leaving to sort out disputes."
10.15 NURSERY OFFICER 3 wanders around the garden then goes back into NURSERY.
GIRL 3 (4:4), GIRL 2 (4:9) and BOY 1E (4:8) continue to draw.
10.20 GIRL 3 (4:4), GIRL 2 (4:9) and BOY 1E (4:8) continue to draw, though they seem to enjoy putting the paper under the clips as much as the drawing.
BOY 2E (4:8), pointing to a snail trail on a leaf., "Look TEACHER 1. What is it?"
TEACHER 1 "It's a snail's trail. It's sticky and shiny. You can see where the snail's been..... What else is sticky?"
BOY 1E (4:8)"Glue."

Fortunately, there are many examples of good practice similar to this. However, even in these more effective EPPE case study centres we found enough evidence to suggest that early years staff in the Foundation Stage require more support in developing their subject knowledge and their knowledge of how to scaffold children's learning.

4.11 Transition into reception

For most practitioners the priorities in the early years are on the development of young children's positive dispositions to learning, self-confidence and independence. A number of respondents referred specifically to the importance of developing a love of books.

While only a minority of the settings (106, 219, 306, 401) reported on the provision of any special learning activities or any concern for children's 'academic readiness' for transition to reception class, there was some evidence that where this provision has been made, it has been encouraged by the introduction of the Foundation Stage curriculum:

…the older children do receive daily planned phonics and maths, which wouldn't have happened as frequently without the desired learning outcomes (sic) in the Foundation Guidance.

(Document '306 interview Manager 2')

For the majority of settings, the practice of introducing the children to more formal organisational structures such as carpet and circle time activities (large group) was considered of more importance than any specific curriculum work:

Although we try not to be too institutional, one of the parents said to me this morning the fact that we have these group times and so on makes them very secure. Her little girl who has difficulty settling and separating went to the school for a trial day and found the circle time non-threatening, 'oh I know what I'm doing here' and sat down. It may not have happened in exactly the same way but the format is there.
(Document '214 int Ed. Worker')

In one setting (225), where the cognitive outcomes are poor but they excel in social development, the manager argued that it was impossible to produce any simple list of skills that the children would need on transfer.

There isn't a list of ten skills that we would like children to reach here and then feel on that basis that they will do really well in reception. We would very much go along with what the New Zealand research said which is that predictors for children's later success in school are around emotional and learning dispositions. They are around confidence, tenacity, collaboration, engaging with difficulty, excitement, exhilaration. That's what we would aim for children to get here.

(Document '225 int man2')

The above statement implies that some early years settings do not see the development of cognitive and social skills as complementary, but they prioritise social and emotional development. In contrast, a respondent from a similar type of setting referred to the fact that four-year-olds were often self-motivated to write their names and cited cases where they had supported individual parents who were working on early reading skills with their children. Staff in other centres also expressed such views:

As they come through, we find that they're more ready to do more formal stuff and they choose to do it. We don't sit them for hours tracing letters but because their names are around and they want to write their names on their paintings etc. we find often that a lot of the children we send off are reading.

(Document '214 int. ed-worker')

Some settings provided visits to local primary schools or encouraged the primary teachers to visit the children in the pre-school setting.

They go up a lot. At the moment we're taking them over and just having a walk through the class and staying there for about five minutes and coming out. Next week we're just going to take two or three in and leave them there for 10 minutes and we do lots and lots and lots of that sort of thing so that hopefully it will be nice and smooth. It usually is, you get a few hiccups but it usually is OK, the six-week break doesn't help but… The teachers try coming to us as well.

(Document '017 int teacher')

…we have children here at the moment who go on a Wednesday afternoon actually regularly into the primary school. They get to know the staff and the premises and their way round. So that's ironed out before they even go in September.
*(*Document '324 int teacher 2')

Wherever possible the teachers come to us and visit the children here in their establishment. The local schools ask if there are any children who need to be together or apart to make It easier. We talk about schools, we have books about schools. Because I've been here a long time and, as you said at the beginning, the teachers to whom I'm sending them on the whole have been in place a long time as well. So we all know each other. And if they can hear if there's something happening they'll go and sort it out or they'll extend it or whatever. Just as though it was in their classroom. I think that's nice.

(Document '324 int. teach')

But while some settings have nearly 99% of the children entering the same school, others saw the large number of feeder primary schools as a real problem for transition.

We have a very wide catchment area, that's unfortunate because I would love them to feed into one school and have a real relationship, but I can't.

(Document '306 int. Man2')

In a range of responses that echo the very similar concerns of primary teachers regarding secondary transfer, some pre-school practitioners expressed concern that the independence that the children were gaining in their time at the nursery setting would not be valued in the primary school:

…that worried us for a while because our children become very independent. I know that there are some nursery and reception classes where they have to ask to use everything. Ask for a piece of paper, ask for a pencil and our children aren't used to that. If they need something they just know where things are and go and get it and that's been encouraged. It worried us that it was being stamped out of them.

(Document '324 int. man2')

A significant degree of pleasure was expressed by some pre-school staff regarding the positive impact that the CGFS was having on reception classes.

Yes certainly the main primary school that we feed to, their reception class teachers have become much closer to us and they're actually coming over here to work much

more with us. For example one of the things that they've done is to lower the sinks in their classrooms. Because they saw the way that our children wash up their own paint pots and things. And as they were standing for an hour washing the paint pots themselves at the end of the day they thought 'why don't the nursery teachers seem to have to do this'. Then it occurred to them that they could just have the sinks lowered so in the summer holidays two years ago the caretaker lowered the sinks so the children could do that themselves. So we're gradually getting there but obviously it's quite hard. It would be easier if we were in the same school I think. We could influence a bit more.

(Document '324 int. man2')

Some of the reception classes have come to us for advice, for support about the possibility of mixing. The guidance is there. They're now talking about the children in the Foundation Stage having access to high quality outside play opportunities. Now, for some reception staff, that's going to be the issue, because most of the time they've just been stuck out in the playground for children up to year 6…. I think it's good. I think, for reception, particularly, because they've been in no man's land. They're not quite nursery, and not quite adhering to the National Curriculum, so they haven't actually fit in or had a phase of education that is theirs in their own right, and it depends very much on your school as whether you are seen as part of a national curriculum or as part of amusements. At least they know now where they belong.

(Document '421 int. headteach')

Despite these positive tendencies, there was also evidence that the old ideological divisions between pre-school and school (informal versus formal provision) remained in some settings and this seemed to be inhibiting progress in transition:

Yes. We have quite a different value base and that continues to be a thorny issue, how do we make that encounter as supportive as possible.

(Document '225 int. man2')

Again, I have been wary in the past about stepping on toes, and taking the children too far down the curriculum so that when they reach Reception class, they're sitting there bored because they've done too much with us.

(Document '306 int. Man2')

Many of the practitioners were critical of the common practice of schools taking one intake in the year rather than taking children into reception classes throughout the year:

They took away Christmas and Easter, and that's just appalling, because some of our children are just 4 in August, and going to school, and they are just not ready unless you get a very capable, able child, and that extra term would be of great benefit to children.

(Document '306 int. Man2')

There were issues around the transition from reception to year 1 as well. The extent to which chronological age cannot be taken to indicate young children's development was also stressed by one of the reception class teachers:

I feel there should be a better transition. Because you can have children going into Key Stage 1 who are five and one day old, Year one is the year in which they have

their sixth birthday. So they can be five on the 31st August and then they're into year one, Key Stage 1 and I think that there should be provision for the kind of experiences and way of learning that's happening in reception for these children. I just think you have to be flexible in your approach so that you can accommodate. The requirement of the Literacy Strategy for example in Year 1 is different from how you're allowed to deliver it in reception. You have to do it in a particular way in Year 1 and you do with the Numeracy Strategy, although you can do it in a much more flexible way in reception. So there are some differences that we're being required to make so you have to do it but you also have to think about the needs of the children. They have to come first and teachers should be flexible enough to be able to accommodate that difference. Because developmentally you can have a child who's at three-year-old level in Year 1. So there needs to be the kind of provision that a three-year-old would need in a Year 1 class. That's my feeling.

(Document '501RC teacher')

Where settings were providing special learning activities for children before they enter reception class, the content and approach varied a good deal.

We do whatever we do in a little more depth than the other children in the younger group. The best way to describe those two group times is that one is all about breadth and building up their repertoire of stories, rhymes, number knowledge, letter knowledge and the other one more about depth…Apart from that we would be expecting them outside to be giving a little bit more to each activity both in concentration and engagement and in different types of approaches. A little bit more stamina and staying power and pride in what they've produced and maybe a more pleasing product at the end of it.

(Document '106 int. man2')

The majority of the children go to the nursery, there are seven that are going into reception. So those seven are being prepared for reception…..Even though all the children can spell their names we're doing a bit extra with those ones. We'll be going into the days of the week for the older ones. It's mainly a bit of number work, just a very simple few bits but it's mainly pencil control.

(Document '401 int. man2')

In one private nursery (219) we were informed that when the children came to transfer they were already very familiar with letters, writing and early grammar.

…we teeter off Montessori half way through the Spring Term and we then start looking more at the reception class materials that most of the schools our children go on will do.

(Document '219 int. man2')

To some extent it may be that the introduction of the Foundation Stage will shift some of the problems of transition from entering reception to entering Year One. We found evidence that the reception teachers in our sample shared many of the pre-school centres' concerns about transition at this stage:

They need to feel good about themselves first of all. They need to feel reassured. You need to prepare them for it, talk to them about it. When they go to the school, on a visit, ask them about what they saw, what they thought, and making them feel good

about telling you about it. Reassuring them that it's not going to be worlds apart from what they've actually been experiencing.

(Document '501 int. RCTeacher')

Yes. I've thought long and hard about this and they're not aims in terms of numeracy and literacy and so on and so forth. And the more I thought about it I firmly believe that reception is really about inculcating positive attitudes to learning. Children come in very curious, very independent and I just want that to be developed so that children develop a positive attitude to school, learning and each other. Social success and so on. Those really are my aims for reception. That's not to say that the academic side isn't important, it is, but it's not what I would put as a priority, the priority is capitalising on and developing what children bring into school with them. By the start of statutory schooling having children who want to be at school and want to learn and start to understand to understand the value of learning and can get on with each other.

(Document '502 int. RC Teacher')

4.12 Staff perceptions of the Curriculum guidance for the foundation stage

Most respondents in the case study effective settings reported on their agreement and general satisfaction with the content of the *Curriculum guidance for the foundation stage* (CGFS).

I'm very pleased with its introduction, I think it's fantastic that they've got a Foundation Stage for us, we're with the reception and we're treated as one. It can only be good that they meld the two together.

(Document '017 int. Teach')

I think there's been a better link (especially recently) to theory. This last document (CGFS) has really helped with that but I think now there's much more assessing of children and tracking children deciding what the next thing they need to learn is. We've got much more written down about children now and we think more about making sure they're having experiences across the curriculum and looking at tracking their rate of progress and making sure that the next stage is planned for. There's much more structure to it and people are more informed about the structure and why it needs to be structured. I think that's the change that's then had implications for your assessment, record-keeping and planning. There's much more of that now that I've returned to the nursery than there was when I was in here nine years ago.

(Document '501 int. RCTeacher')

But despite the positive reception of CGFS, some settings clearly found the new initiative stressful:

…we were quite happy with the Desirable Learning Outcomes and we had organised our whole nursery around it and were comfortable with it. And felt we were giving a good curriculum and felt the children were still benefiting from everything. Because we've always done an education programme from day one. A structured monthly theme…and it was just based on very simple good stuff. And OK we took the DLOs on board. And then suddenly we don't do DLOs anymore and because we had such core support, I have to say that, we did have core support, then that (CGFS) landed on my desk, I've been to a couple of training things. We've have also got an OfSTED coming up quite soon.

(Document '413 int. teacher 2')

The single element most popular about the CGFS in this research was its emphasis on continuity into the primary school. To a great extent the pre-school teachers see the guidance as a validation of their principles, and many of our respondents stressed the benefits that the CGFS would have for children in reception classes.

I like the idea that it includes the Reception children, because I think that Reception children have had it really quite tough over the past few years. I think they're quite good, the only thing that concerns me is that it's another new approach, a new language, new ideas, new documentation to familiarize ourselves with, I mean the goals came first and now it's the second stage.

(Document '417 manager/teacher')

The main thing about it that I can see is that my grave concern was a few years ago was what was happening in reception classes. Reception teachers didn't necessarily have early years training and were being put under really incredible pressure to do the Literacy Hour and the Numeracy hour and I thought it was becoming far too structured. We were going back to the days of when you've done your work you can go and play in the Home Corner, that kind of thing. I used to be very anxious about some children, particularly those entering reception class nearer to four than to five missing out on a whole wad of nursery experience and they're just not ready to sit down and meet the demands that are going to be made of them. Now I think the Guidance Notes are going to enable those reception teachers who knew that that wasn't the practice they wanted to adopt to argue in school if they need to that that's what they should be doing. I also think it points out to people coming into reception class. Sometimes you can get junior teachers who've been teaching year six I've seen that in schools- suddenly put in the reception class. So I think with the Foundation Guidance that kind of teacher will have far more of an idea of what's expected of them.

(Document '214 int. teach')

Two further areas of concern that were expressed by respondents about the provision for the CGFS in reception classes were associated with the issue of play space and individual progression:

I think they possibly haven't got as much space in the average primary classroom. They certainly haven't got the range of resources that we've got in terms of equipment. They haven't got the ratio of adults to children. A lot of reception classes are saying 'because of space I can either have sand or I can have water' there should be both, it's not good enough. I think if you look at our outdoor area and the range of equipment that we've got, our children are used to going out there and playing with all that equipment. All their skills are developed, at primary school twice a day they're put out into a yard with no equipment whatsoever. So how are they going to (continue to develop) from that. And that's where I think the social development comes into it because they're left to their own devices they haven't got anything to play with. That's when the problems arise.

(Document '324 int. teach2')

If it works I think it's going to be so beneficial for the children. I used to get so many phone calls saying 'this child is so awful, he's so disruptive and so naughty'. I said 'excuse me I think we're talking about the wrong child here' but it's because he's bored if he's an exceptional child. And he doesn't want to go back to 1,2,3,4,5 and learning colours and shapes because he's learnt it. He did that in year three here'. And they were being held back these children through no fault of the teachers, if you don't have the background knowledge you don't know. Everybody starts off in the

same place don't they. And that was very obstructive, upsetting and boring for some children. So I hope that that will stop.

(Document '413 int. man2')

In several of the settings where staff reported little change in their practices as a result of the CGFS and Early Learning Goals (ELGs), it was felt that the standard of provision that was suggested by these documents fell below their prior or current practice.

When there were day care centres still part of the social services they tended to depend on who was running them. And the provision varied from room to room as well as between centres. This one was very disorganised and very badly equipped. So one of the things that I tried to sort out first of all was the planning and the curriculum obviously and I think because we organised that right at the beginning…it seemed to fit in anyway actually with what came….the desirable learning outcomes weren't actually as rigorous as what we had in place already so we looked at them because we were obviously going to be inspected against them but we found that our expectations and our standards were much higher. So it didn't matter it was more like 'oh, we've looked at them, right fine we're doing them' and it was no problem. The Learning Goals have been more useful for staff because they've broken down much more, they're useful for staff doing records…for looking at records and children's progress. And I know that when we've had teachers who haven't had a lot of experience in Early Years they've found them very useful. But again it hasn't changed the way we plan or altered the way we do our Early Years records to send on to schools.

(Document '214 int. man2')

But it is clear that in other cases the CGFS is only partially being applied and in most cases this may be simply because the settings current practices are considered more appropriate. It may well be that there are ideological issues here that need to be resolved.

We follow the Early Learning goals, parts of them, but ultimately, as we don't have the OfSTED Inspection we don't have to follow the guidelines. So what we actually do is look at the guidelines and pick out the areas that we feel are important to our children and then actually tailor-make them into what we feel is right for our children.

(Document '219 manager')

I think the bit of the Foundation Stage that we haven't faced up to and worked through what we're going to do as a result of it (a bit like with the DLO's) is the communication, language and literacy bit which has some bits we're very, very happy with. Particularly the addition of the word communication was a great step forward for us. But it also has a whole set of stuff around early writing and reading, which I still view very strongly as being completely inappropriate for children in the Foundation Stage. So one of the reasons why I want us to put quite a lot of effort into early literacy next year is I want us to be very confident and clear about what we are actually doing for children. And to avoid that thing where either practitioners or parents are looking at the guidance and thinking 'but I don't see this happening, where is the one-word level work in our nursery centre?'. So obviously I'd be much happier if that part of the document was substantially different to the way it is. But given it is the way it is, what we've got to do is be very crisp and clear about how we see children's early literacy development. Make as many links to the document as we can. At the moment we're sort of burying our heads in the sand about.

(Document '225 int. man2')

On our first OfSTED I was told that I must do certain things with the children and my reply was: 'Sorry, I will not make children do things they don't want to, we will encourage children to move towards these goals. We will facilitate their learning, we will hopefully give them experiences that will make them move down that path, but at their own pace'. And I certainly do not have any criteria that any child must be writing their name, have a store of twenty words…No that's not what we're about. If we've got children who are interested in that and wish to do that then we will give them that opportunity but if we've got children who are not interested in picking up a pencil, are not interested in the sounds of words, then so be it...we do have a core of children who did need extra challenges from us and that's why we brought in Phonic. And we were still told by OfSTED last year, having done that, that we ought to have a reading scheme involved because we had more able children. So we are currently looking at (I'm not saying we're going to do it) reading schemes and whether any will naturally fit in with the Phonic that we do, and if it does we may try it and if there isn't one out there we can say that we've researched it and we have decided not to take it on board.

(Document '306 manager')

Even where staff felt there was little impact of CGFS upon their curriculum or pedagogy, many reported changes in their assessments.

Assessment yes, because the local authority came up with a matching assessment scheme and I have been piloting it this year since September, since the academic year started.

(Document '106 int. man2')

It's (CGFS) probably affected our record-keeping more than anything else because we've rehashed the format, we had redone the format to coincide with the DLOs and we'd redone it again. But that's only a different method of recording the same thing. Except that there are aspects of it on the maths and literacy that I think are too advanced.

(Document '324 int. teach2')

Despite these responses, it may be that many of the changes brought about by the CGFS are quite subtle and therefore under-reported. In one setting we were informed of significant changes in the staffing responsibilities and in another of a raised awareness of special educational needs.

A few things that came out of it were that (Nursery Headteacher 1) and I used to split group times. One term I would do the young children and then the next term we would change and I would have the older ones. We've stopped that now because we felt that out of that document they were wanting you to do more number work with the older children. But because she was a teacher and she was trained better in that area than I am it would make sense for her to take it. It's a disadvantage I would say…

(Document '106 int. nn')

Perhaps we're more aware. Again that's always been a slight problem in that people will come to the school and say 'you've got an awful lot of difficult children here with special needs'. And apart from the most obvious one we think 'we cope with them we're used to them'. But now I suppose we're making ourselves be more aware of them. We've always had a lot of children with speech problems so if the parents haven't picked up on it I'm making sure I do and I'm referring them for speech therapy and the ones that need an IEP because they've got other problems. I've got lots with speech problems that are perfectly fine in every other area. They just need

specific help so they're not on an IEP. But we're now thinking 'he has got a few problems, perhaps behavioural or… he is going up soon and he doesn't really know his colours' so perhaps we're putting more children on now.

(Document '017 int. nt')

Our childminder interviews (n=46) show that the training programmes providing curriculum knowledge based on the Curriculum guidance for the foundation stage (CGFS) has yet to make a major impact on the general practice of childminders. We report on the childminder study later in this report.

4.13 Information and communications technology (ICT)

When it keeps saying, 'you have performed an illegal operation' I'm waiting for the police to arrive any minute. So it takes time. Because I am like this I have great sympathy for these little mites who think they're going to damage everything.

Document '324 int. teach'

An instrument developed in research conducted for the IBM KidSmart initiative and the Developmentally Appropriate Technology in Early Childhood (DATEC) project was used to evaluate the overall practice of ICT provision in the case study settings (Siraj-Blatchford, J. and I. 2001a/b) (Appendix 9). In the methods section we explained that we rated the following areas:

- Information handling and communication skills
- Access and control of ICT tools
- Learning about the uses of ICT

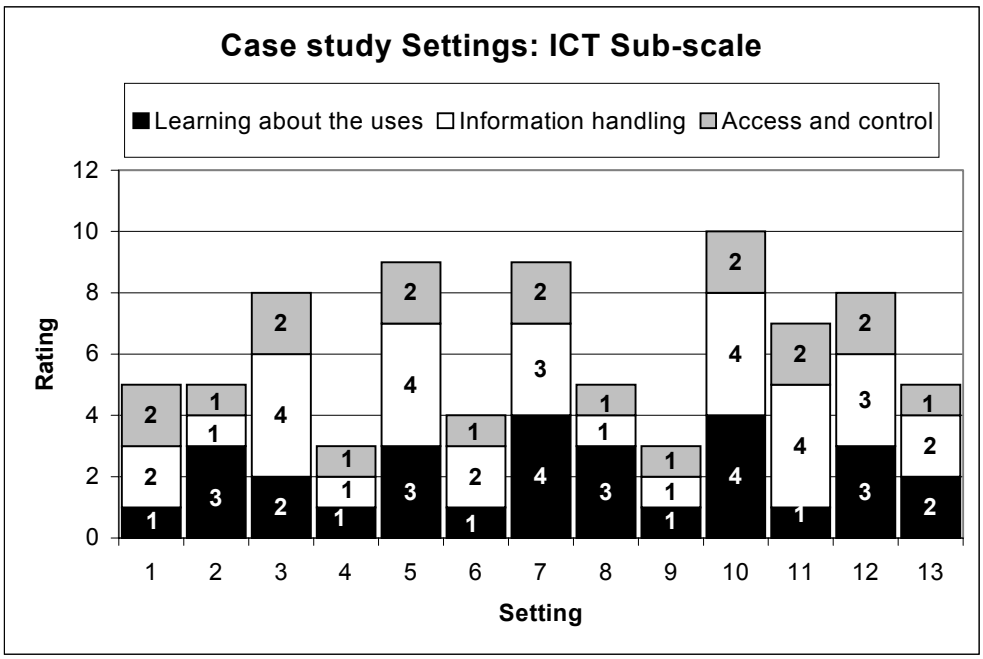
Each one of the three items includes examples that describe the ICT provision, and others related to equipment, facilities, pedagogy and social interactions. In common with the other ECERS, a seven-point scale is applied to indicate a range of practices and provisions that are considered inadequate (Level 1) to excellent (Level 7). Table 3 and Figure 27 show our findings. The table shows that the case studies achieved comparable average scores to the (various non-profit) settings randomly selected for inclusion in the IBM initiative. If we consider the overall average scores across all of the settings and items, the case study settings achieved an overall average of 2.08 on the sub-scale while the KidSmart settings achieved 2.15. The criteria for selection of the KidSmart settings was that they should be serving communities in need and that they should benefit from the associated computer hardware and software that was donated and the KidSmart settings might therefore be taken to represent something less than the average provision. They were provided with equipment and training; this was the intervention which improved their item scores. This would suggest that despite the effective practice of the case study settings with regard to the cognitive and social outcomes identified by EPPE, their performance in terms of the ICT curriculum was relatively limited at this time. The KidSmart evaluation post-intervention scores (overall average 4.33) are included here to show the potential gains that may be achieved in a fairly modest one-year intervention (Siraj-Blatchford, J. & I. 2001a).

Table 3: ICT provision

	Case studies	KidSmart Pre-intervention	KidSmart Post-intervention
ICT Sub-scale	(average)	(average)	(average)
Learning about the Uses of ICT	2.2	2.6	4.6
Access and Control of ICT tools	2.5	1.7	4.1
Information Handling and Communication	1.5	1.9	4.3

All but one of the case study settings was equipped with at least one computer that was available for the children's use every day. In setting 219 (Setting 4 in Fig.27), those children whose parents paid an extra fee for ICT were given a half an hour computer session each week. About 50% paid for this service while some were reported to be quite adamant that they did not want their child to do it. The part-time ICT teacher brought four laptops on his visits, enough for one machine between two children. In setting 413 (Setting 9 in Fig. 27) the computer was temporarily positioned outside the manager's office away from the main teaching area and this restricted its use. In another setting (501) the reception class had access to a computer suite for two hours on a Friday afternoon. The findings show that in each of the settings the ICT curriculum remains at a relatively early stage of development. The lower performance on Information Handling and Communication suggests a limited integration of computers into the early years play environment and in support of learning associated with the CGFS.

Figure 27: ICT item scores



On several occasions, individual children were observed to be playing at the computer for periods of 35-40 minutes at a time and some of the staff that we interviewed were clearly concerned that children used them for even longer periods at times. A good deal of uncertainty was expressed regarding the appropriate use of computers (a problem directly addressed in the DATEC project, see:

http://www.ioe.ac.uk/cdl/datec). Respondents voiced concerns regarding the amount of time that children spent at the computer. Specific concerns were expressed regarding the inappropriate ergonomics, and about equality of opportunity. Practitioners were also anxious that the children should move around more and spend as much of their time as possible interacting with others.

It varies, some children would go on the computer every day if you let them and others never go near. We do try to encourage the ones who don't very often to take it on. Often we have to wean children off and watch that they're not spending too much time on it. (Document '324 int. teach2')

The majority of respondents reported boys spending more time at the computer than others and in at least one of the settings a good deal of thought had been given to the reasons for this.

I said it's equal but after I thought about it, it is more boys. There are quite a large amount of girls who just won't choose to go on. Not because the boys use it more it's just that they don't choose to or want to. (Document '017 int. NN')

I think it tends to be if the boy goes first a few more boys come round….But I think because you've got a group you've got to be fairly strong to fight your way in. GIRL 5 will, GIRL 5 will be there every day regardless, you've got the likes of GIRL 6 who'll turn to her mum and say 'I'd like to go on the computer, but I'm not very sure'. So her mum had a word with me and we stay down together and we spent some time just the pair of us and now she goes on it nearly every day. Another girl is a very nervous child. She heard somebody say 'if you keep doing that you're going to break it' to somebody doing something but she took it very literally and she won't go on it at all in case she breaks it. So we had to wait until there was only she and I in the classroom and then I could encourage her to go because she was frightened somebody was going to touch something. (Document '324 int. teach')

While none of our staff referred in any way to the importance of providing positive role models, in at least one of the settings (421) the children frequently saw a volunteer mother entering book returns at a computer within the setting. The solution for many settings has been to introduce some form of rota system to control the children's participation and ensure equal access:

They're only allowed 10 minutes on the computer, and, if you have a very able capable child on a computer, we allow them 20 or 30 minutes.
(Document '306 int. Man2')

We have a system whereby they get their stickers and then I usually put five or six empty squares on a piece of card so the child puts it's sticker on and then the next one until all five stickers are full. But then you've got the mathematical aspect of 'I'm after so and so' and it's a way of self-monitoring who's going to be on next. Then they can perhaps wander round and do something else until it's their turn they don't just have to sit there. (Document '324 int. teach2')

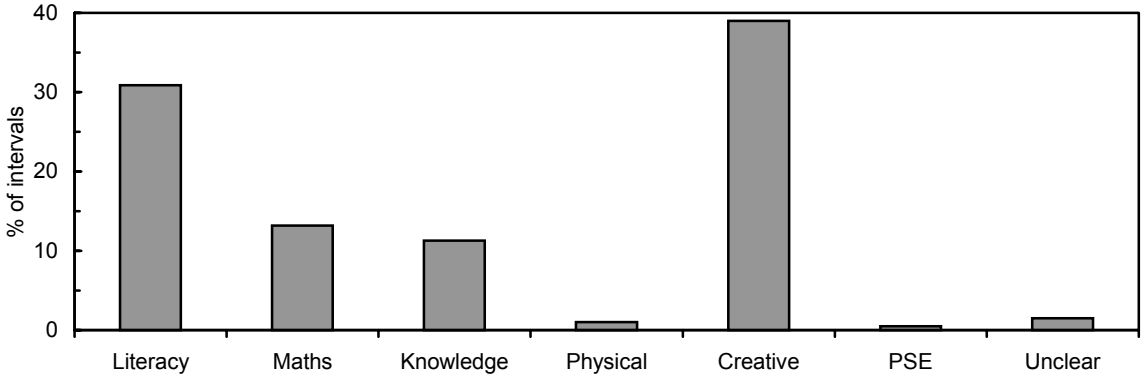
…the nursery has got a timer a five minute timer. We also put a grid down with everybody's name on it, and told the students to put a smiley face next to their name when they'd had their turn that was when we wanted everybody to have a turn on particular programs, to give them all an opportunity. (Document '421 int. NT')

…in conflict with their central policy of non-intervention, observations show that staff will occasionally direct children to alternative activities if they feel they are either monopolising or fixating on a particular experience; e.g. the computer, and not experiencing a varied or balanced diet. (Document '106 doc')

I've got concerns about one child whose parents are always saying to me how wonderful he is, how he knows everything on the computer but I'm really worried about that child's language development because I think he does it too much at home and does nothing else. She thinks because he's progressing on levels where he's got a lot of skill on the computer he's actually very, very clever but his lack of language is stopping him from accessing all sorts of other things.
(Document '214 int. man2')

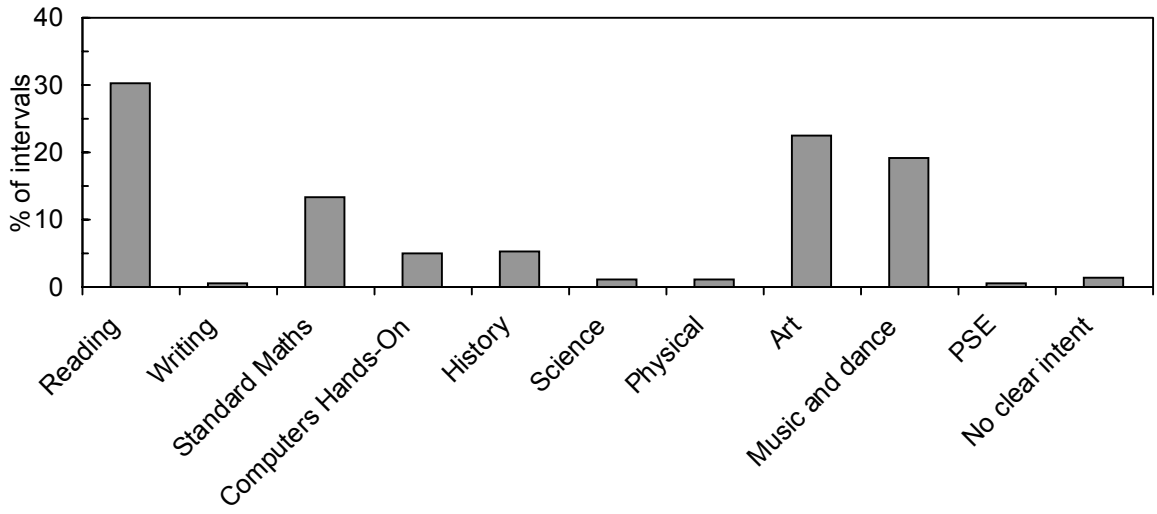
Figure 28a shows that when children are using a computer, they are mainly using it as a tool for creative development (through computer painting programmes etc), followed closely by programmes used to encourage the acquisition of literacy.

Figure 28a: Curricular areas (proportionally) in which children use computers



When the curricular areas are examined in more detail it is possible to see that when children are experiencing the creative area of the curriculum through computers there is an equal split between art and music and dance programmes. However, while children experienced the literacy area with computers this occurred almost exclusively through reading (figure 28b). When computing appears within computing hands-on these were the times when children were developing computer skills, for example opening and closing programmes, using the mouse, and printing.

Figure 28b: Children's learning activities when computers are used



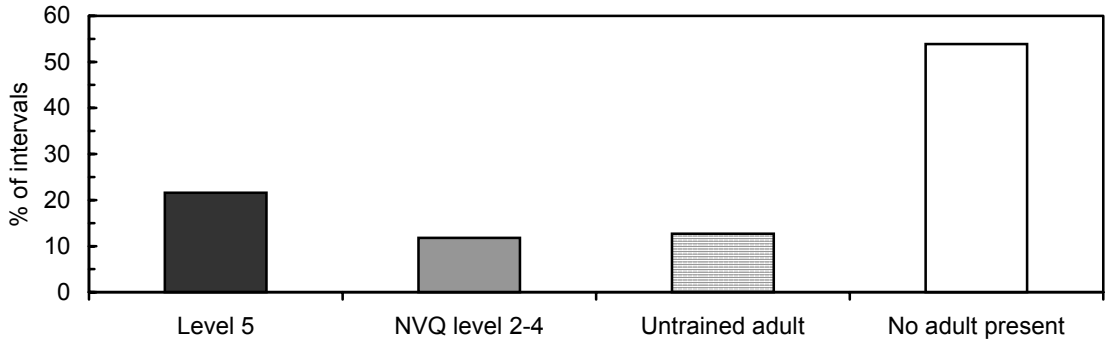
Examples of practitioners helping children access software and supporting them when they got into difficulties were frequently recorded throughout our observations. Given the inadequate adult-child ratios, and the tendency for children to be working in a group of only two at a time on the computer, it wasn't surprising to note that in only a few cases was this support extended beyond two or three minutes. In the majority of cases adult support was limited to intervention when the children experienced problems or required supervision.

GIRL 4 (4:2) is at the computer, TEACHER 1 sees she is struggling and kneels down besides her. She explains what to do.
TEACHER 1: "Keep looking, keep looking. Which one's still moving? Which one's moving? Wait till the square is round the moving one. Press the space bar. Have your hands ready. Quick, press it. Now. Quick. Press it. Wait till it's round that one."
GIRL 4 (4:2): "I've done it."
TEACHER 1: "Well done" and she returns to her chair.

(Document '017 obs. 2')

Figure 29 shows which staff members (if any) are present when the child is computing. Overwhelmingly it can be seen that children use computers primarily without an adult present. However, when adults are present, they are more likely to be fully qualified teachers (Level 5).

Figure 29: The adults who engage with children in computing activities

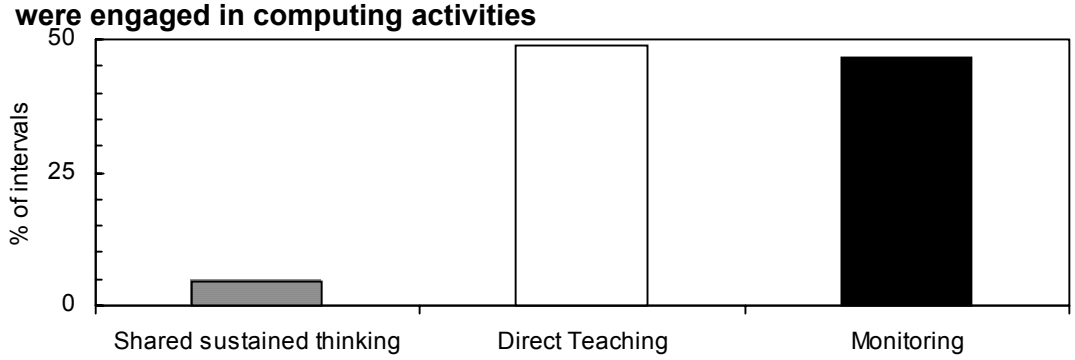


Where settings were accustomed to having an adult working for extended periods with small groups of children the computer appeared to be integrated more easily into the curriculum. Where this was less the case, it sometimes presented difficulties. One practitioner explained the difficulty particularly clearly.

I suppose that's part of the way that we want to work is to be able to step in and out of their learning. It's more difficult to have things that need to be kept controlled. That involves changing our way of working a little bit. (Document '426 int NT')

Figure 30a displays the proportions of different cognitive pedagogical interactions that staff members engage in with children while they are computing, clearly revealing that staff members most commonly are using direct teaching interactions and monitoring interactions with children whilst they are computing.

Figure 30a: Cognitive pedagogical interactions which occurred while children were engaged in computing activities



As monitoring and direct teaching interactions were the most commonly used interactions with children generally, and in ICT, it is interesting to analyse further which specific types of interaction were occurring within the categories of monitoring and direct teaching (figure 30b). When these categories of interactions are further examined, the most common staff interaction was to be *present* and available for the child who was computing, however, not interacting with that child. When the direct teaching interactions are further investigated they reveal that staff were questioning, instructing and managing the task. This seems to suggest that children are left to develop their computing skills independently, with staff member questioning, instructing and managing only when necessary. It is interesting to note that staff rarely engaged in scaffolding during children's computing activities.

Figure 30b: Cognitive pedagogical interaction sub-categories when children are engaged in computing

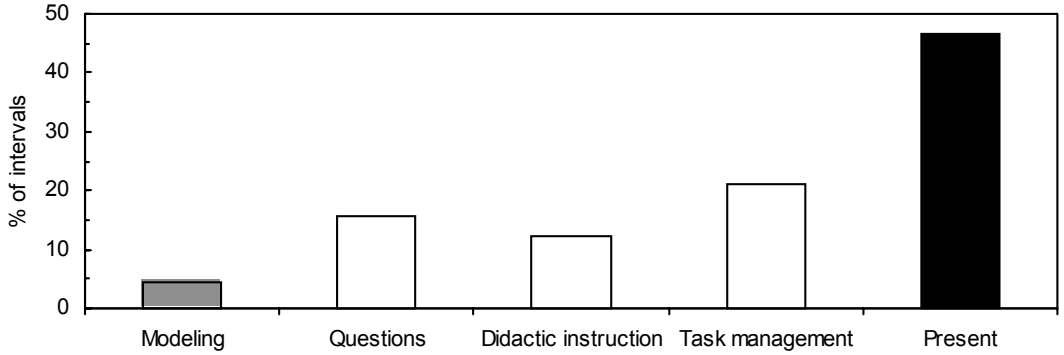
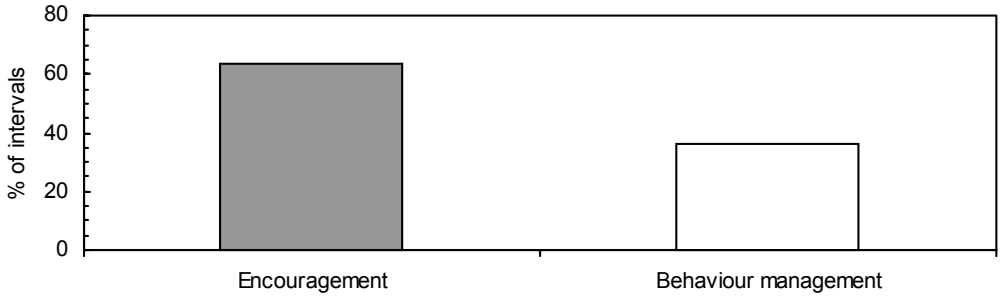


Figure 31 shows the different proportions of social pedagogical interactions which occurred when children used computers. Two main types of social interaction were used: encouragement (65%), and behaviour management (35%). In conjunction with figure 30b, a clear picture of teachers' pedagogical strategies emerges, which focuses on allowing children to discover for themselves, while providing encouragement, questions and management if appropriate.

Figure 31: Social pedagogical interactions when children are engaged in computing



We specifically asked the practitioners what they felt that children learnt from their time at the computer. Their responses often reflected the quality of the software being applied but their responses also demonstrated a clear a lack of confidence in the matter.

They're really the kind of technological equivalent of workbooks (laughs). But at the same time there's a technology there about using a mouse etc. That's why you would say that they have their purpose. Although if I took that logic to the nth degree I would say that workbooks are OK because they teach children how to use a pencil and I don't think I subscribe to that.

(Document '426 int. NT')

The most frequent references were made to the development of hand-eye co-ordination and the fine motor skills associated with controlling the 'mouse'. Several respondents also referred to the importance of the children gaining confidence with the technology because they would be required to use it when they started school. While some references were made to the value of the computer in supporting number and language and literacy, and frequent references were made to the children's on-screen painting, few practitioners were using the equipment to achieve specific CGFS learning goals.

Well I suppose they're learning the basic skills of how a keyboard works and how the mouse works. (And there are) number and letter programmes that we have so there's the recognition and the counting and things like that. But other than that I'm not really sure what they do learn, we just like them to be familiar with the keyboard and the mouse and generally how it works because we know that computers will be part of their school life.

(Document '106 int. NN')

For me their main use is for them to just become familiar with the equipment and not to be phased by them if they don't have access to them at home. So when they move into school they're familiar and comfortable with using it and they don't do mindless staring at the screen activities. That's really the bottom line.

(Document '214 int. Man2')

In two of the settings, the potential of the computer in motivating children in early literacy was emphasised and the equipment was clearly being exploited effectively to that end.

…some children find it a very attractive medium, so that the more formal methods of learning, which might not work for some children, work here.

(Document '306 int. Man2')

I put Word on, and they were just typing into there and I was saying: 'Oh, look what you've written, can you tell me what you've written?'. And we spiked I underneath. Then this little boy started writing 'mum' then he wrote his name, then he wrote 'I love Mum' or something, just very simple words but I said: 'Look at all this writing you're doing!' And he was actually then believing that he was using the computer to write, and he was, he didn't want to do it with his pencil, but now he writes brilliantly. That was just one way in to one child and I think if you've got the computer there it's worth it.

(Document '501 int. RecTeach')

Two staff members also referred to the ways in which older or more capable children were encouraged to support those less able.

I think it gives the children that are explaining a lot of confidence in that they know something that they can pass on. So it makes them feel, there's a high level of self-esteem there. And for the younger one, when they actually get hold of it (and it usually is the younger one). When they actually know what they're doing and they can move their chair and take over and the older one (or the more experienced one will say) 'you've got it' that means far more than us coming in here and saying ' you've got it'. I think they're learning an awful lot about social interaction as well and sharing.

(Document '106 int. Man2')

In most settings, the children work at the computer in groups of 2-4 and several respondents referred to the quality of the children's collaboration. However, our observations and at least one respondent suggest that the quality of interaction was actually quite variable and depended in part on the involvement of existing friendship groups.

Yes, I think it is interactive and they do collaborate but then there's always the kind of children who are very confident with the computers and they do tend to take over. They get frustrated when somebody's not doing it properly and their hands are itching to get on the keys.

(Document '214 int. Ed-worker')

1.30 Boy BOY 1 Sat at computer doing computer activities alone. The game is a sorting activity sorting animals by wings/horns/antennae/fins.
1.40 He is joined by BOY 2 "Can I play on the computer?" They work together co-operatively on the computer. They watch the game together and share a joke about the game. "Those ducks are swimming backwards".
1.45 They play familiar games to which they do the actions together e.g.: making arms move like a train.
1.50 They play a game of putting together pieces of an object (like a jigsaw) in the correct position which involves recall, pattern construction and mouse control. Throughout all this BOY 1 is in control of the mouse. BOY 2 is actively involved "do this" "use this colour etc." However, he does not ask to be able to use the mouse.
1.55 They begin to tire of the games and close down. They go to the library and find a box of tapes and books under the chairs they fish them out and have a look. They decide not to do this and run off to find another activity.

(Document '306 obs. child 1')

In one setting we heard how children often fought over the mouse but in another the staff had discovered an innovative means of extending the children's collaboration by running two adjacent computers with the same software at the same time.

They learn how to fight at the computer. We don't have much fighting, but when we do, it's at the computer. Girls can take or leave the computer, some of them are quite interested but boys love it. The computer is quite good for some of the brighter children, and the ones who have a computer at home, and it can stretch them, the ones that are beginning to know letters and are really good with their numbers, but I would be quite happy not to have a computer in the nursery because it is the most unsociable piece of equipment that you could wish to imagine. It's extremely frustrating….Very often it's not over a game but a fight over the mouse.

(Document '417 int. man)

We've got the two computers so we had 'dressing the teddy' and you hear the conversation 'I've put this sock on' and 'I've put the shoe on' and they're looking at each other and each other's screens and discussing the program. It's interesting to see how they dress it and the sequence they do it in.

(Document '214 int. Ed. worker')

In some settings a good deal of print is displayed, with wide use made of the computer to produce labels and titles in displays, but in others these uses were relatively limited. While many respondents recognised the part to be played by cassette recorders, telephones, scanners, and digital cameras we found little evidence of settings using programmable toys, and the integration of work on the computer screen with activities off screen were very limited. The most innovative work that was recorded involved the use of digital cameras and of scanners.

X's used them quite a lot for them creating backgrounds to some of their artwork as well, and we did a lot in the beginning of the year using the scanner, where children lifted up the scanner and arranged collage materials on it, using things we'd found in the park and were able to use.

(Document '421 int. NT')

Children bring in photographs, sit and watch them scan, making those connections. Playing with computers is like playing with construction toys.

(Document '421 int. head')

The potential of integrating ICT within socio-dramatic play was not always fully recognised but examples of good practice were sometimes apparent.

Well we always have telephones around, sometimes we have an office area (we haven't at the moment it's being used) so that gets used and we have things like little calculators. But it's for mainly role-play I would say, that they use those.

(Document '106 doc')

Yes, they use mobile phones in their play, make-believe ones that they make out of Mobilo or whatever they can find, they make some very good phones actually. They have it flipped and everything and Mobilo is very good for that and they do use that in their play.

(Document '214 int. Ed-worker')

…we use telephones that don't work for review times and role-plays. They've got the idea. We have a little TV monitor and a very old video which we'll put perhaps into a house area. Or into a shop so that they can see the prices coming up on the set up. So we do use them in imaginative play. We do use the copier, the cameras. The

children can take photographs. The digital cameras they find difficult, and even some of the staff still hold it up to our eyes.

(Document '324 int. teach')

Some respondents expressed reservations about the use of some aspects of ICT but the general level of provision was clearly related closely to the resources that were available.

I haven't got them [programmable toys] here. I have used them and I do think that they do have their uses. I find some of those things are quite disruptive from a management point of view because there's an awful "I want a go, I want a go, I want a go!", as opposed to the actual just looking at what it teaches us and how are we doing it, possession is nine-tenths of it.

(Document '426 int. NT')

And we've used an overhead projector a lot this time, so the children can write some stories. And we use a keyboard in the writing area. We've got 10 electronic pianos in the music areas, so they've got keyboards as well.

(Document '421 int. NT')

The benefits of in-service training were clear to our respondents and they generally looked forward to finding the time and the resources to develop their capabilities further. A particular priority in this for many staff was to gain further knowledge of how to use the technology more effectively specifically with young children.

And how to use programs for things to do with the children. I think I'm alright doing stuff for me but I'd quite like to have training on things to do with the children.

(Document '017 int. NN')

It [the ICT course] was more to do with email and Internet access. I didn't find it particularly useful, it would have been far better to have had some child orientated computer (course).

(Document '106 int. NN')

I freely admit that ICT is not my strength, I really do need some better training. I'd like to go on a course with somebody who really knew a lot about working with computers with under fives. One of the things I find really frustrating is they break down so much. Somebody I know who's familiar with computers says that's because too many people are using it. If you have one computer with lots of users the computer's going to do funny things. And it's very hard to stop children sticking their fingers in and playing with the keys, it's just so frustrating when they won't work. I'd really like some training by somebody who could inspire me because I'm sure there are lots of lovely ways I could be using ICT for imaginative play.

(Document '214 int. teach')

I think there are ways that it could be developed and it's something that over the next few years we are all going to do. We've just got a digital camera, and we've had great fun using it to record things but I' sure that there are going to be ways that we can use that with the children in a much more exciting way than we've probably even thought about yet. Those are the sort of things that are probably, if I really think about it, the ways in which ICT is useful with young children. It's about building up our own skills in those areas. It's only relatively recent that staff had any ICT skills at all. A year or so ago I'd say that probably only the teachers here had any skills in ICT. Now gradually everybody's getting a bit more skilled in that area.

(Document '426 int. NT')

Our findings suggest that even in the case of these effective settings (in terms of the EPPE Cognitive and Social outcomes), the ICT curriculum remains at a relatively early stage of development. Practitioners remain unclear regarding the learning objectives and while computers are seen as valuable resources there is still a great deal to be done to integrate the technology into the pre-school learning environment. Despite these limitations some degree of innovation is already apparent and examples of effective practice have been identified. It is clear that further training especially training that is focused specifically upon the needs of young children is called for and would be well received.

Further discussion of many of these issues, as well as concrete proposals on how to resolve them have now been drawn up following research carried out under the auspices of the Developmentally Appropriate Technology in Early Childhood (DATEC) project (see: www.ioe.ac.uk/cdl/datec). This website includes the summary guidance provided for practitioners.

4.14 Training and Qualifications

The timed systematic observations distinguished between staff at levels 5 and 2-4 of qualifications, and those adults who had no educare training. Figure 32 reveals in which areas of the curriculum practitioners with different levels of qualification spent their time. Level 5 and NVQ level 2-4 staff members spent the greatest proportions of their time working with children on literacy type activities. Level 5 staff members also devoted a high proportion of their time to children in mathematical activities. Adults who had no educare training spent the majority of their time working with children in the area of creative development.

Figure 32: Qualifications of staff working with children within different curriculum areas

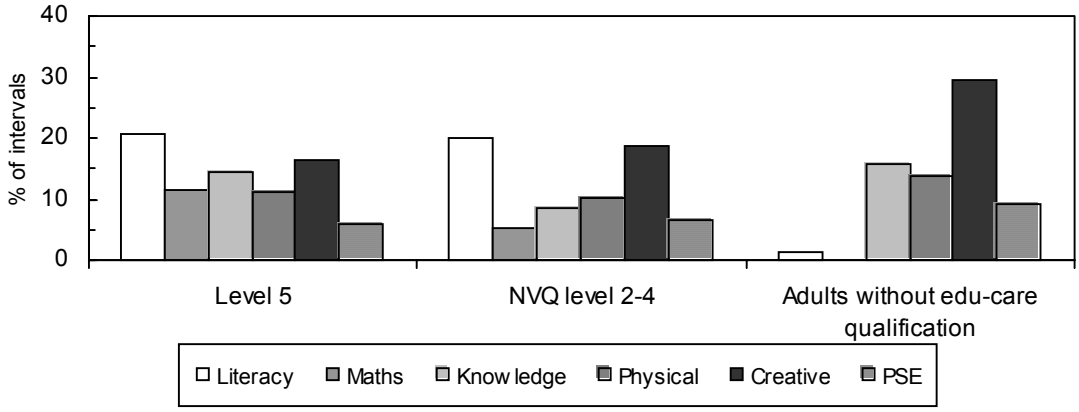
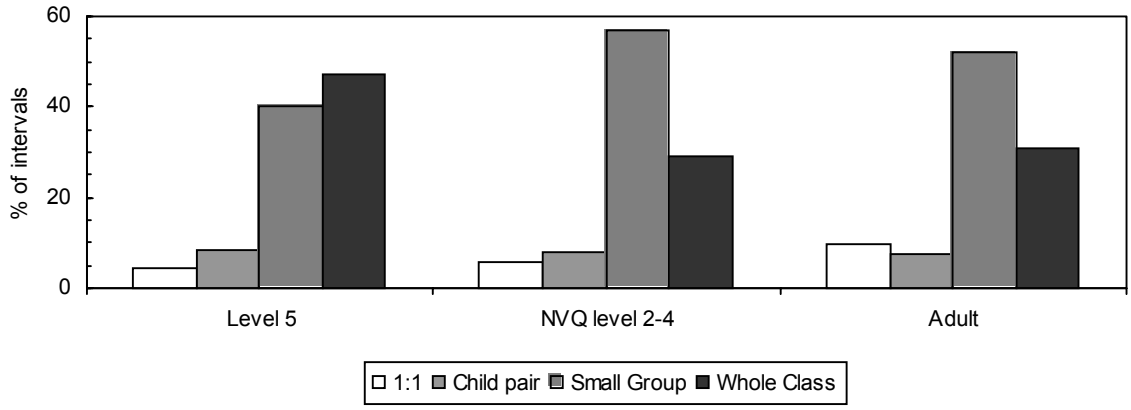


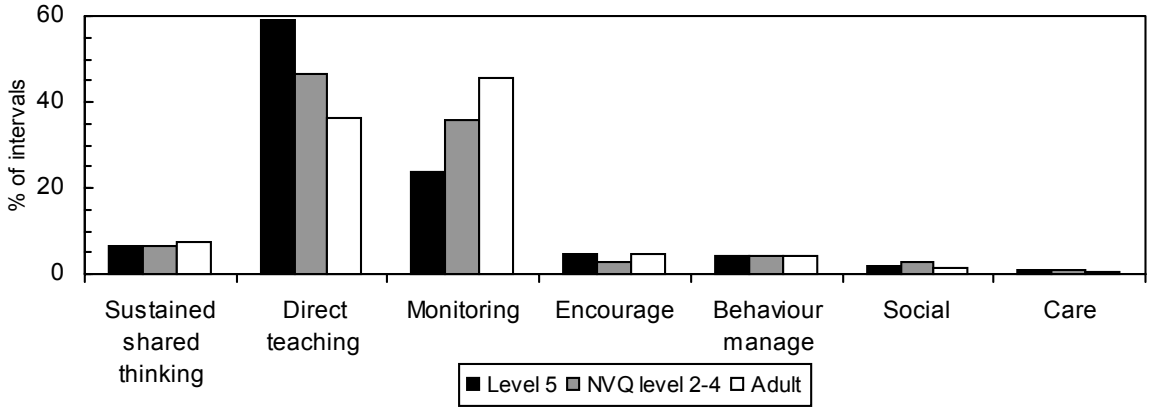
Figure 33 shows which social groupings differently qualified members of staff spent their time in. Level 2-4 members of staff spent their time similarly to adults with the majority their time spent with small groups of children. Level 5 teachers however spent the greatest proportion of their time with whole classes of children.

Figure 33: Qualifications of staff working with children in different social groupings



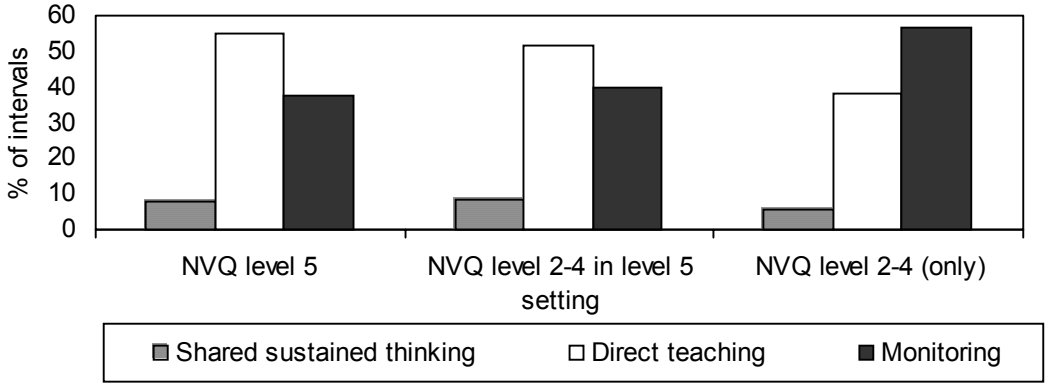
The levels of staff qualification made a difference to the proportions of direct teaching and monitoring interactions which staff made (figure 34). Level 5 practitioners spent a lot more of their time using direct teaching interactions than unqualified adults, and much less of their time monitoring children than unqualified adults.

Figure 34: Summary: amount of pedagogical interactions made by practitioners with different levels of training



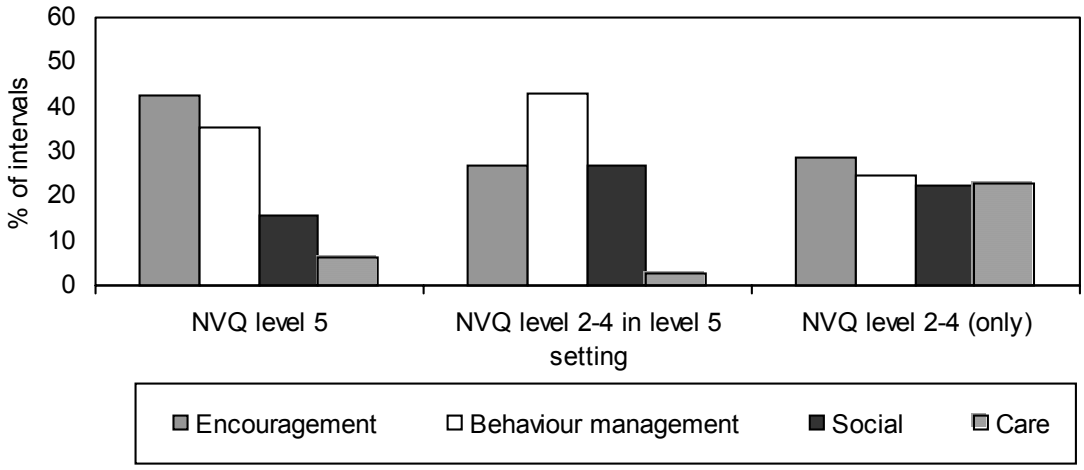
In the systematic observations we also distinguished between those NVQ level 2-4 practitioners working in settings with level 5 practitioners and NVQ level 2-4 practitioners working without Level 5 practitioners. Level 2-4 staff members working with level 5 staff engage in a higher proportion of 'sustained shared thinking' and direct teaching than staff members with the same level of training but who work in settings without a trained teacher (figure 35). Conversely Level 2-4 staff working on their own devote more time to monitoring.

Figure 35: Cognitive pedagogical interactions of staff with different qualifications



When considering social interactions, level 5 practitioners used a greater proportion of encouragement compared with differently qualified practitioners (figure 36). Level 2-4 staff working with a level 5 practitioner act more like a level 5 practitioner than those level 2-4 practitioners who are working alone. In other words, levels 2-4 staff working on their own used less behaviour management and used many more caring interactions.

Figure 36: Social pedagogical interactions of staff with different qualifications



The presence of a level 5 teacher also made a difference to which areas of the curriculum children experienced. Children working with educators from Levels 2-4 in settings with a teacher engaged more in literacy and knowledge and understanding of the world curriculum areas compared to staff with the same qualifications working in settings without a teacher.

The learning activities which children engaged in are also similar when children were in the presence of level 5 practitioners or level 2-4 practitioners who worked with a level 5 practitioner. However, children in settings with levels 2-4 staff working on their own engaged in quite different activities as shown in table 4. The biggest difference in children's activities is seen when children were alone and there was not a practitioner present, at these times children's activities were all 'play'-based, while the activities children engaged in when they were in the presence of highly trained staff were very 'academic'.

Table 4: Children's most common learning activity when in the presence of staff with qualifications

	Level 5	**Level 2-4 with Level 5**	**Level 2-4 only**	**No practitioner present**
1st	Staff-led unison activity	Listening to teacher read	Domestic activity	Pretend play
2nd	Listening to teacher read	Staff-led unison activity	Adult directed art and manipulation	Large muscle movement
3rd	Waiting	Domestic activity	Staff-led unison activity	Manipulation
4th	Doing calculations	Task related observations	Listening to media	Social talk
5th	Manipulation	Waiting	Waiting	Domestic activity

4.15 Parents and the home learning environment

One of the main educational implications of our discussion of the processes of learning and pedagogy is that there may be an advantage for the parent in the home becomes responsible for the direction of much of his/her own learning, with the parent serving as a source of information as it is required. Tizard and Hughes' (1984) study corroborate all of this. This influential study was designed to compare the language experience of 30 four-year-old girls at home and at school. The main areas of interest were:

- The amount of adult-child conversation in the home and school settings.
- The nature of conversations in the two settings.
- The activity or context in which conversation took place.
- The adult's curriculum.
- The role of the adult in the child's play.

Half of the children were defined as coming from working-class families and half were from middle-class families. All the children attended a morning nursery school session and spent the afternoons at home with their mothers. The children wore radio-microphones for three consecutive mornings at nursery school and for two consecutive afternoons at home and an observer was present to note the context of the talk. Tizard and Hughes (1984) found that, whilst the conversational exchanges in the home were rich and encouraged active participation on the part of the children, the exchanges in the nursery school between adults and children were impoverished, with teachers posing a series of questions, rather than fostering conversations. This led to teachers underestimating the abilities of many of the children in the nursery. The young children in this study tended to initiate interactions, ask questions and seek information more readily at home than at school. In the home much of the conversation and activity between adults and children concerned everyday life and was initiated by the child in response to happenings within the situation. The parent was uniquely able to respond to the child because she/he too was part of the context. Parents were also better able than other adults to respond to their child's previous understandings and experiences. Wood (1986) calls this 'inter-subjectivity' and concludes that conditions for the generation of a contingent learning environment are more likely to be located within the home than in school (a 'typical' rather than an especially excellent school is probably considered here).

Almost all school improvement and effectiveness studies corroborate that parental involvement is one factor (among several other factors) which improves schools. As early as 1979, Rutter *et al* argued that school processes are very important to outcomes, and that schools need to consider their ethos as a useful concept in understanding the characteristics of their school as social organisations. Research on school improvement and effectiveness suggests that where staff had been involved in the development of curriculum/pedagogic guidelines for their school, there was likely to be school-wide consistency in guideline usage. Where staff had not been involved, however, there was likely to be variation, with teachers tending to adopt individual approaches to the use of guidelines for different curriculum areas. It appears, therefore, that staff involvement was related to a more consistent school-based approach to curriculum. (Mortimore et al, 1988, p233). If we accept that parents provide sensitive, socio-culturally 'embedded' learning environments for their children then it is likely to follow that where there is some consensus and consistency in the home and school's approach to children's learning and the curriculum then more effective learning outcomes could be achieved (Jowett et al., 1991; Long, 1991; Epstein, 1988; 1991; Schaeffer, 1992).

All 14 case study settings in our study encouraged parents to read with their children, but those settings that encouraged continuity of learning at home had better cognitive outcomes. Some research on parent involvement, for instance many studies in reading and literacy development (Hewison, 1988; Hannon & James, 1990) suggest that children's educational development can be enhanced with long-term positive effects. The more knowledge the adult has of the child the better matched their support and the more effective the subsequent learning. While a good deal may be achieved with structured observation and record keeping, parents clearly have a distinct advantage in this respect.

Not only may the experience at home provide something not readily available in school but also it seems that the skills involved apply as much to the process of attention, perseverance, task performance and work organisation as to particular areas of knowledge. Learning how to learn may be as important as the specifics of what is learned. (Rutter, 1985)

In the United States the large-scale and longitudinal studies conducted by Joyce Epstein, 1987; 1988; Epstein & Dauber, 1991) offer a useful model (below) upon which investigations of school improvement (particularly those aimed at raising the academic achievement of children) and parental involvement can be explored. We adapted our interview schedule (see appendix 4) to ask parents about:

1. Parenting skills, child development.
2. Communications from school to home.
3. Parents as volunteers in school.
4. Involvement in learning activities at home.
5. Decision making, leadership, and governance.

We interviewed a total of 107 parents from the 14 case study settings.

Communication between parents and staff was, on the whole, very consistent but generally informal and responsive to the needs of the child in terms of general welfare and well-being. Studies arising from the Plowden recommendations focused heavily on the frequency of parent contact with schools. As Bernstein and Davies argued in the 1960s, the notion that quantity of contact, of itself, could raise the educational achievement of disadvantaged children is extremely doubtful (Bernstein and Davies, 1969). Both the secondary research data that we inspected and our own findings suggest that a more active involvement is required.

The qualitative analysis of our staff observations appear to show an association between curriculum differentiation and matching in terms of cognitive challenge, and sustained 'shared thinking'. The qualitative evidence suggests that the better the setting does on each of these dimensions of good pedagogic practice the more cognitively effective it will be. But the evidence also suggests that some settings may be effective even where these conditions are not met. Our findings suggest that where a special relationship in terms of shared educational aims has been developed *with* parents, and pedagogic efforts are made at home good outcomes may be achieved.

In the private day nurseries where the pedagogy of the settings was unremarkable the cognitive scores were high (after controlling for background etc.), and in two of them the scores on social and behavioural development were high as well. It was interesting that the predominantly (upper?) middle class parents in these settings consistently wanted their children to develop social skills from the early years settings

yet they were themselves very aware of providing a strong educational home environment; they were tuned into the discourse of education and were pro-active in initiating learning activities at home.

She'd been looking at numbers at school then I'd do that at home. If she mentioned she liked a particular book at school we'd find that in the library and we do letters at home. So, yes I do try to follow it at home. I think her particular project at the moment is woodland when we go out we try to do woodland things…I do think some of the project work is over ambitious but where I can relate to it then yes I do.

(219 PDN parent 09)

She's one of the ones who's been chosen to read in front of everybody. It's an awful lot of work for the key worker, they put together a little pack or wallet for each child and they put in the letters with the actions and the book and the stickers they have to put on. It's daily but it progresses weekly…She knows so many words, it's all phonetic, even words which she hadn't come across before. She is one of the youngest to start school, she's not four yet, she'll just be four when she starts school but she's going to be able to read. You don't know whether it's going to be good or bad. Hopefully they'll take it into account. ..The kids are not learning to read in a bad way.. It's everywhere so I don't think it can do any harm.

(306 PDN parent 3)

We were interested to see if the parents of children from more disadvantaged communities where the cognitive and social outcome scores were high were supporting their children's learning at home, or whether it was entirely the setting's work with the children that gave them a head-start. We already knew from our observational analysis that some excellent pedagogical practices were being practised. Although the following examples may not appear remarkable, the consistent approaches by staff to inform parents about their child's progress and to communicate what the setting is trying to achieve with individuals was emphasised by the parents over and over again.

They suggest things you can do at home and you take home books. You've got the library and they suggest how to talk to them if you've got any problems you know how to approach it. They do really help. I know they learn quickly and I know I've got the setting to thank for that. I know I've done some hard work but they've done a lot as well.

(426 parent 6)

Other settings with good and successful outcomes such as 214 DC and 426 EEC provided regular information through records of achievement and monthly meetings with key workers. In the case of 219 PDN and 421 NS weekly feedback is provided. What is distinctive about all of these settings is that they focus on what they are teaching the children and report regularly to parents on their children's achievements. These settings engage in more regular on-going assessment of children's learning, and this supports the parents from these settings in engaging more in complementary educational activities in the home.

The weekly report has a section on what activities the group has been doing we have talked about squirrels this week and things like that. Then 'S' has mostly played this week with this type of material and she's learned the letter P and R she now knows numbers 1 to 4 for example. And the last bit is what she has enjoyed most. The end of report is like 3 or 4 pages, much more detailed and goes to cognitive development and social development of the child. What she has learned in terms of letters, drawing and ballet and French. (219 PDN parent 04)

All three combined settings (2 early excellence and 1 daycare) provide excellent parent support, an open door policy, classes for parent development (e.g. computers, assertiveness) and a very friendly informal environment for parents to meet each other. We have examples of settings in disadvantaged areas where parents give their children good academic support, however this is mediated through the work of the settings. The setting which cannot do this, setting 225, an EEC with excellent parent support and poor cognitive outcomes is employing a less effective strategy by emphasising parents' needs above those of their children, rather than seeing the needs of children and parents as different but complementary. They also promote social development and support above educational development, rather than seeing these as complementary.

I think I probably don't follow things up from here as such. Again I haven't been coming in as much. I suppose if he becomes interested in something from the nursery then we will do something at home that follows on from it.

(225 EEC parent 6)

Involvement in *learning activities at home* and parent involvement in *decision making, leadership, and governance* have been shown to be associated with better academic achievement (Epstein 1991). Our findings show that it is the *involvement in learning activities at home* that is more closely associated with better cognitive attainment in the early years.

For families from more disadvantaged backgrounds, parent involvement (which was largely conceived by parents as 'helping out'), was not common or associated with setting outcomes. In fact some of the highest scoring settings had no voluntary parent involvement at all. Parent support was common in the EECs and the daycare centre but only where it was combined with shared educational goals were the outcomes higher.

In contrast to this, settings where the cognitive outcomes were worse than expected (although not the social), tended not to communicate the children's progress regularly to parents. Sometimes parents were given written feedback or a daily chat (where requested by the parents), or a summative report, often at the end of the year or the term.

That is one of the conversations I have not had very much with the assistant, which may be could be expanded; what we do at home has never been discussed very much with them. I would be interested how they felt, I imagine they would be talking with people whose child had a particular difficulty. They address the issues rather than (talk to us) if there is no issue.

(017 NC parent 6)

They don't give written information of my child's progress, When I come in to collect him everyday and every now and then I will say ' How did he get on today?' they will reply ' Fine, OK or really good' If he's done something really good as I'm leaving they usually pull me up and tell me themselves. Most of the time I'll ask but there is no written information we don't get any of that to say how they are progressing.

(401 PG parent 5)

Parents felt that settings, which were sensitive, responsive and consistent (in terms of staff), were more effective, and this links well with the research literature on good practice (Bowman et al 2001).

Whether parents and/or children are tuned into what the setting is trying to achieve seems to be linked, at least partially, with what happens at home. It appears to be associated with what the parents do with their children when they are not at the setting or what the children initiate with their parents.

Parents do have anxieties about the difference in pedagogy and curriculum when their child enters reception, but the parents' of the children in reception classes that we studied were reassured. Interestingly, parents didn't expect a different approach from reception, but one that articulates well with nursery practice, and does not become formal too quickly. This continuity in transition from pre-school to reception was important to parents.

The nursery was a very good start for my child, they were very good in teaching her starting to read and phonetics sounds and getting her writing. It was just a play environment and they weren't left on their own, they were encouraged and they were taken aside…She's only been in reception since Easter … they seem to be very caring about the children, they seem to be interested in the children, and my child on her second day here came back and said 'I've learnt stuff'.

(501RC parent 5)

Parents who had children with special needs made very specific remarks e.g. "Good people, who are dedicated to the kids. They should have knowledge of psychology" (214 parent 7). Another parent referred to access of specialists (who know about SENs).

The present increased training provided by the Childminder Networks and local authorities has positive implications for childminders. It allows for increased awareness and understanding of a range of relevant issues to the childminder and results in increased status, higher levels of security and self-esteem.

Part 5 *Survey of Effective Childminders*

5.1 Childminders, pedagogy and the Curriculum guidance for the foundation stage

The childminding service provides an important pre and post Foundation Stage (often providing for children birth to fourteen) childcare service to many families, enabling parents to work while ensuring their children have flexible long-term care. Childminders in accredited networks can offer 3 and 4-year-olds free nursery education places under the Nursery Education Grant arrangements. Since our project is concerned with identifying good practice within Foundation Stage settings the project team felt that pedagogical practices in this largely overlooked area of early years provision needed some investigation. This is made particularly relevant as childminders with children 3-5 years old are currently experiencing major changes in their professional lives with the publication of the *Curriculum guidance for the foundation stage (CGFS)* in 2000 (QCA/DfES) and the *National Standards in Childminding* in 2001. The latter brings an unprecedented development as all childminder settings will be regulated by a new Early Years Directorate within the Office for Standards in Education (OfSTED) (Childminding: Guidance to the National Standards, 2001).

5.2 Qualifications and professional development

Details of the methodology, sampling and procedure for the conduct of the 46 childminder interviews is explained in the methods section at the beginning of this report. As the sample was chosen to reflect the opinions of a group of childminders that had been either trained to NVQ Level 3 (within the nationally accredited framework of qualifications) or identified as good to excellent practitioners it would be expected that a high percentage would hold recognised qualifications. It was found that 28 (61%) of the sample held qualifications to Level 3 or above (2 of the childminders held qualifications at Level 4 and another 2 at Level 5), while 8 (17%) are currently working on Stages 1 and 2 of the Certificate of Childminding Practice (CCP) and are in effect working towards level 3. One was at Level 1 while the remaining 9 did not currently hold any qualifications.

This high percentage with relevant qualifications is significant. Pence and Goelman (1991) found that the quality of care provided by Canadian childminders was higher among those who had undertaken specific professional development. Only 21% of the 497 childminders who responded to the questionnaire sent by Mooney et al (2001) to a national sample of childminders had a qualification related to childcare and education, and the registered childminders workforce survey carried out in 1998 by the Employer's Organisation/Improvement and Development Agency (EO/IDeA) found that only one third had such a qualification. This is a much lower proportion than practitioners working in other childcare and education settings. In effect over 70% of the overall childminding workforce is unqualified. As would be expected in a selection of good practitioners our sample had over 70% who were qualified.

Almost all of those interviewed, including those without formal qualifications, expressed positive views towards on-going professional development. There was a general tendency among respondents to see the importance of providing planned learning experiences but not a compulsion to do so. Two expressed concern that if official pressures continued to rise they would stop practising, however they lacked clear information on new policy developments.

5.3 Knowledge of CGFS and Early Learning Goals (ELGs)
The establishment of a statutory foundation stage for children aged from three to the end of the reception year is a significant landmark in funded education in England and Wales as it gives for the first time status and a distinct identity to the early years and to learning. The Guidance states that in order to help *'give children secure foundations on which future learning can build'* its purpose is to *'help practitioners provide learning and teaching experiences of the highest quality throughout the foundation stage, while allowing them to respond flexibly to the particular needs of the children, families and community with whom they work'* (Foreword statement CGFS, QCA 2000).

Registered childminders fit into this category of practitioners and, despite the short time that the Guidance has been in circulation, there have been moves to help childminders become familiar with its contents and examine their provision in the light of its demands. Training has been arranged by the National Childminding Association (NCMA), the Early Years National Training Organisations (EYNTO) and the local Early Years Development and Childcare Partnership (EYCDP) organisations at various levels most notably included in the requirements of the Certificate in Childminding Practice (CCP) and NVQ3 qualifications.

Eleven (24%) of the childminders felt they had a fair to good knowledge of the CGFS while twelve (26%) said they had no knowledge of the CGFS at all. Half knew of its existence at various levels of awareness but only 3 had their own copy of the document and very few knew how to obtain one.

The ways that the childminders acquired their knowledge of the CGFS, apart from those who were given the information as part of their professional development on the NVQ Level 3 training courses, was diverse. The most common routes were from leaflets from childminder organisations at local and national level. One had downloaded the document from the QCA website. A few picked up information from other family members who were in the teaching profession or working in schools and from their own children's schools. Two became knowledgeable of the document through their role as parent governors. It is clear that groups such as the EYDCPs and OfSTED need to act quickly to provide childminders with appropriate information for their type of service, something that is tailor-made.

There was little difference in the numbers or extent of CGFS knowledge among childminders in the accredited area compared with the others. In all areas two-thirds to four-fifths of childminders claimed to have some knowledge with 13 (72%) coming from the accredited sample. These suggest that although the other areas had not yet reached the accredited stage they were all near to doing so and therefore systems of training and support where already in place and had been for some time.

Those with fuller knowledge felt it had affected their practice in that they were able to make connections between areas of learning and see the potential in an activity in ways they had not done so before; *'it has made me understand more about what I am doing and made me more aware of how I can provide for the next steps' (CM LO6).* 4 (9%) were attempting to incorporate the six areas of learning into their planning and provision.

Many of the respondents expressed an increased awareness of how ordinary, everyday activities 'covered' the CGFS areas of learning; the CGFS were considered to provide a satisfying validation of what the childminding settings had to offer. This sense of satisfaction could be an important factor in improving the status of the profession and the development of confidence and self-worth amongst childminders.

Mooney et al. (2001) recently found that 39.7% of their nationally representative survey of childminders felt that society's lack of recognition for their work was the most dissatisfying aspect of childminding. 16.9% of Mooney's sample complained that they made less money than they deserved, and another 12.2% felt there was a lack of appreciation from parents.

The respondents tended to identify different CGFS areas of learning that were embedded in activities and planned to achieve curriculum balance; as one childminder put it:

Activities are chosen that will cover as many goals as possible (CM EO7).

There was no evidence however, to suggest that any increased awareness of the CGFS influenced their levels of interaction with children or pedagogic styles, and this may be an area upon which to focus in future training.

Very few had suggestions for improving the CGFS. Both positive and negative reactions were evenly distributed, between feeling that the "stepping stones" to the Early Learning Goals (ELGs) seemed very formal, to thinking the Guidance was quite user-friendly. Several remarked on how they were '*getting used to it'* (CM EO7) and in so doing felt more positive towards its use as a support and guide. A few voiced their concerns and anxieties regarding the CGFS. They felt that childminders mainly took a caring role and they felt daunted at the prospect of having to plan what they perceived as an inappropriate and more formal curriculum. They did not appear to understand the range of play-centred approaches which could be adopted to achieve the ELGs.

The evidence shows clearly that those childminders involved in NVQ Level 3 and the Certificate in Childminding Practice (CCP) courses are more familiar and confident with the CGFS and are more inclined to be influenced by it in their settings. The most striking influence is in the increased awareness of the importance of play (both indoor and outdoor) and providing a balanced set of activities.

'I do look at play in a different way and it has helped me to balance the week out in the overall scheme of things' (CM SO3).

One respondent (CM LO9) reported on her use of the story of 'The Very Hungry Caterpillar' to trigger off a programme of integrated activities. Several others mentioned 'carrying on' or extending ideas or work brought back by the children from primary school.

The sample provides no evidence to connect any lack of knowledge, interest or use of the CGFS with age or experience. Pursuit of knowledge and training appeared to stem from individual attitudes and traits rather than other factors such as age, years of experience or location (although there may be other factors that have not been fully examined in this study; for example, other personal commitments or interests, or spouse support). Several childminders cited travelling distances as a reason for not attending training courses but the evidence is too fragile for this to support the idea that isolated living areas or poor transport are important factors. Childminders lack of knowledge about the CGFS could be due to a number of reasons, which need further exploration (lack of computer access or training for example). We might also speculate that there may be a body of childminders who, while acknowledged by professionals and parents as 'effective', do not see themselves, or are resistant to the idea of seeing themselves acting as educators in any formal sense.

It appears from this small-scale study that childminders who have received training that includes elements of the CGFS are more aware of the educational processes within their settings although this does not necessarily suggest that they are more confident or more capable in supporting a broad and balanced curriculum. They do appear to be able to make more connections and to see the potential in any particular activity and they seem to understand more fully the nature of play and be more aware of Equal Opportunities issues. They are also more likely to take notes, make observations and keep developmental records, and foster a more professional relationship with parents.

5.4 Childminders' aims for children's learning

We found that a few childminders were bemused when asked about the aims for the children in their setting. Once prompted, eighteen (39%) expressed variations on the theme of wanting their children to be happy, enjoy coming to the setting and to have fun, although it is difficult to show accurate percentages as most childminders listed aims that covered a number of categories.

There was also a wish to provide a variety of opportunities and develop a range of skills. Some responses were linked to educational opportunities and learning goals but more were concerned with developing the CGFS domain of personal, social and emotional (PSE) skills of integrating and sharing with others. One childminder was especially specific about developing 'social skills'.

To socialise, to play together, to be rounded individuals, know right from wrong and to be tolerant and work out conflict. (CM MO4)

Six (13%) responded with aims that had explicit educational elements: '*helping them to learn from where they are and from what they can do'* (CM M12) and *'to enhance their skills and present little goals for them through schemes of work'* (CM EO8). One childminder from this group was keen to develop the children's learning by recording progress and setting individual targets for the next steps in the six CGFS areas of learning: *'just started a file to record progress into what the children already know and can do with what they need to aim for'* (CM SO1). However, additional aims were also expressed in this group echoing the predominantly PSE flavour of the overall response. Only one childminder spoke of her aims in purely educational terms *'support them in their learning, help them move on and progress'* (CM LO7).

Almost all saw their aims in terms of considering the children's needs before those of the parents. One aimed to ensure that parents felt safe to leave their child in her care but only one childminder stated that one of her aims was to provide parents with a service. Ten (22%) mentioned that they wished to provide a safe and secure environment with two placing these aims within the family context *'to provide a loving, secure family environment'* (CM M16). A few also made specific reference to providing continuity and opportunities to develop physical skills and independence although these elements appeared elsewhere in response to other questions in the interviews. For example responses to the value of outdoor play indicated that nearly all of these childminders were concerned with providing opportunities for physical development.

Several made specific reference to enabling the children to integrate successfully into full-time education. They tackled this by ensuring the children were able to mix with peers, manage routines, be proficient in their personal skills and cope with new adults. These aims became more explicit when they were asked specifically how they prepared their children for school where it was evident that this area is one in which

they feel their role is especially important. Two separate approaches were noted. A few built on everyday experiences.

Yes, with books and talking about school. They have experiences with the daily school run, at the gates, going inside, knowing about book bags and lunch boxes. (CM E08)

They get used to getting ready for the school run by putting on their own coats, socks and shoes. It's always a rush and my own children (9 and 11 years) *sometimes give them a hand. Then we meet other children on the way and they see children in the playground and watch them play.* (CM S02)

Others were more educationally specific:

I help with getting them to undress and dress and doing up shoes, opening lunch boxes and eating faster. We practice holding pencils and writing names. (CM S01)

5.5 The Foundation Stage areas of learning

As seen from the previous sections, only a few of the childminders were confident enough to identify their provision in terms of all six areas of learning. Analysing the data however shows that these areas are frequently represented via a variety of routes.

1. Personal, social and emotional development (PSED)

The process by which children develop personal and social skills is said to be essentially interactive and needs to involve forming relationships and interacting with other people (Roberts 1998). Children will then have opportunities to learn communication skills, see different points of view, manage conflict and their own strong emotions. Another crucial element is the development of self-esteem within the individual, which is not only essential to fostering a sense of well-being but also to achieve positive learning outcomes. This area is closely related to the development of positive learning dispositions and has been regarded as an appropriate priority in early years settings (Bowman, 2001). The Guidance also states that it is *'crucial that settings provide the experiences and support to enable children to develop a positive sense of themselves'* (CGFS page 28).

The data from this study shows that childminder settings can offer opportunities for these skills to develop as continuous processes pervading through the day and practised in a variety of ways. Nearly all childminders provided opportunities for the children to practise relating to a range of different age groups. These varied from regular visits to Drop-ins and Mother and Toddler groups, expeditions to the shops, post office, library, local supermarket and the stalls on market days to receiving visitors and relatives into the home. Several cited the importance of the children having access to a range of ages, from babies to older children (particularly teenagers) who enjoyed playing with the children, when they are at home, as well as elderly neighbours or relatives. Outings, in addition to those already mentioned, were seen as providing good opportunities for learning appropriate social behaviour. An interesting example was provided:

We go to the pub to meet my husband for lunch, in the garden when it's nice and inside if the weather is bad. (CM SO4) This did not happen frequently!

Preparing food and sharing meals was also seen as an important time for children to learn essential skills of how to use cutlery, sharing, taking turns and talking sociably.

Everyone helps to prepare lunch and snacks, set the table and eat together. I encourage the children to take turns, say what they feel and listen carefully to each other. (CM LO9)

These experiences, together with outings, have been identified as excellent ways for children to relate to their surroundings and they give children plenty to *'observe, think about, discuss, represent and incorporate into their play'.* They may also provide opportunities to develop positive dispositions towards learning (Roberts, 1998).

Six (14%) childminders in the study claimed to follow a behaviour policy which was usually presented to and discussed with parents, although sixteen (33%) claimed to have very few or no behaviour problems putting this down to knowing the children since they were babies. All had given thought to behaviour management at some level and a variety of strategies were employed. The most common was the use of 'time-out' (35%) although this seemed to be used sparingly and often only as a last resort. Other common strategies were 'distracting' the child to another activity, and talking about, explaining and praising good behaviour. Setting boundaries and being consistent was seen as important along with having high expectations. Two (4%) mentioned modelling appropriate behaviour and one felt it important to help the children to *'sort things out and make up'* (CM E10). Five (11%) specifically mentioned that they employed a *' no smacking policy'*, although the data does suggest that the percentage is substantially higher.

There is some evidence that training has been very useful for childminders in determining how they manage behaviour. Several have expressed relief in the support they have received over this issue from courses organised by their local authorities as well as the CCP and NVQ3. Most childminders seem confident enough to impose their own rules and boundaries and only a few seem less so in the face of parental wishes. Lack of confidence occurs more often amongst the younger group and so could be age and/or experience related. However, a difference in attitude can be detected between those childminders looking after children in deprived areas where boundaries are imposed confidently and those in more affluent areas where there is a stronger tendency to consider different approaches to suit different family backgrounds and upbringing.

The only male in the sample was among those who encountered few behaviour problems but he did feel that:

Having a man in the house' offers a 'male role model which encourages good behaviour, especially amongst boys (CM M02).

He also felt that good behaviour was encouraged through peer pressure as the older children show and model the new/younger ones the expected behaviour of the household (CM M02). This latter point was echoed by another respondent who believed that babies learn how to behave well by watching and copying the older children (CM M12).

2. Physical development

The Foundation Stage is clear about the beneficial effects of a sound physical development programme that goes beyond the obvious aims of developing physical abilities through improving the skills of *'co-ordination, control, manipulation and movement'* (CGFS p100). Two equally important strands embedded within these aims are the development of confidence and a positive sense of well-being.

All of the childminders in the study supported the view that young children need 'to be physical' and felt it important to offer as much opportunity as their settings allowed. All those with gardens seemed to be very well equipped with outside apparatus and toys, indeed it appeared to be an area where they made particular effort to offer excellent and often imaginative provision. The following examples were typical, *'an enclosed garden with a grassed area with playhouse, slides, see-saw and swings'* (CM S01), *' a garden with playhouse, climbing frame, swing and slide, trikes, scooters and prams'* (CM M08). A few were particularly elaborate, *'a two storey playhouse built by my husband with a desk and chairs etc. swings and slide complex with a cargo net, a sand-pit, balls and bats, hoops and skipping ropes'* (CM E08).

In many cases, despite the range of experiences provided at home, childminders offered further experiences via outings to local parks and playgrounds. This was particularly important to childminders where space was limited. Childminders living in flats with little or no outside space regularly accessed public spaces and could also offer more sophisticated experiences, for example at the local sports centres for 'soft apparatus play' and 'tiny tots gym' sessions. Other popular venues mentioned were the 'ball park' and 'bouncy room'. One childminder kept to a twice-weekly swimming programme (with two different children).

Twenty-nine of the respondents (63%) supplemented outdoor opportunities further by regularly attending local Drop-In centres and Mother and Toddler groups. This percentage was markedly higher in the inner city cohort where 90% accessed organised play facilities. Here, as in the other areas, outdoor facilities offered free access with age-appropriate toys and equipment together with constant supervision either from professional play workers or the childminders themselves taking turns on a rota basis. Lack of sufficient supervision was mentioned in a few cases as a cause for concern and, apart from those lacking outdoor space, was an area that several childminders identified as placing limits on time played outside in their own settings.

When asked how much outdoor play they allowed, 20 (44%) said 'every day' and 'as much as they want'. Further questioning and the examination of daily timetables showed that apart from the organised play sessions, outdoor play was more restricted than initial responses might suggest. It is true that the children were outside frequently and regularly but much time was taken up going to and from schools, the shops, and on other outings. From the 20 respondents above, only 4 seemed to offer genuinely unlimited access, while a further 10 offered regular time-tabled slots during the day with longer periods after school (often when the younger ones could be supervised and played with by the older children). Overall, 6 (13%) childminders cited insufficient supervision as a reason to limit outdoor access including one who would have liked to provide more swimming.

All the childminders saw opportunities for outdoor play in terms of 'free play' that was determined and carried out exclusively by the children. Although they might engage in minor interactions during sand play or take a lead if planting seeds, there was no evidence that they engaged or intervened in the outdoor imaginative play. Provision for physical development tends to be seen as incidental to outside play rather than something that is planned and monitored according to the aims of the CGFS.

It is clear even from this small sample of effective childminders that the physical development opportunities that children experience in childminder settings can vary widely according to the individual settings depending on location, local facilities and childminder personalities and inclinations. Those who were aware of the developmental aspects and attempted to provide appropriate opportunities were those with higher levels of training. It was interesting to note that lack of space and

financial resources for larger toys and equipment were cited as disadvantages over other forms of day care provision.

3.Communication, language and literacy, mathematical development and knowledge and understanding of the world

Almost a quarter (24%) of the childminders claimed a 'fair to good' knowledge of the CGFS but very few were interested in providing opportunities to satisfy the aims of these separate areas of learning as stated in the Early Learning Goals (ELGs). Two settings however, operated a nursery-style model (with additional registered help) offering planned learning opportunities within a structured timetable. Both worked from long and short term plans although only one setting used the CGFS, while the other used themes to link up activities (identified by the childminder as 'developmentally appropriate'). Plans from the former setting show a greater awareness of how well chosen equipment and resources can offer valuable opportunities for discovery and practice while the latter relied more heavily on television programmes and commercial packs (e.g. Letterland and Tentown).

Both settings focused on simple literacy and mathematical development, learning the names and sounds of letters, name writing practice, identifying and naming numbers and simple counting. These activities were presented as the 'formal' part of the day. Formal worksheets were not popular and not used other than for colouring in or simple dot-to-dot activities.

These activities did not occur only within these two settings, in fact all of the childminders offered similar learning experiences at times, but they tended to be more incidental or opportunistic. One respondent felt that the CGFS was difficult to understand without an education background and more off-putting to curriculum planning than supportive. Another felt that her knowledge of the CGFS was not adequate to work to this standard but she was certain that her provision in these areas would improve over time.

I've only been using it for under a year, so I'm working through it as the children grow. I think it is quite user-friendly but it has taken a while to get used to it and I'm only feeling familiar with it now. (CM E07)

Planned opportunities presented as organised forms of play were offered in most settings and children accessed the mysteries of letters and numbers through stories, rhymes, songs, play and/or creative activities. All of the settings tended to use informal approaches in developing knowledge and understanding of the world (KUW). This area of learning is concerned with developing within children *'the crucial knowledge, skills and understanding that help them to make sense of the world'* (CGFS p 82) and is designed to provide a basis for later work in science, design and technology, history, geography and information and communication technology (ICT) (CGFS p82). Here, the learning outcomes are considered much more unpredictable and provision relies on a level of serendipity rather than design. Childminders generally felt comfortable about learning in this way.

We go out for walks looking for things, like feathers. Then we might do something with them when we come in. (CM S08)

We attend a local French group where the children sing French songs and learn some of the words. This was inspired by the books and tapes sent by my eldest son who married a French woman and now lives in France. (CM M09)

This experience also provided an example of understanding the structures of families once the photos and video of the first grandchild arrived. Integrating the child into the intimate life of the childminder in this way can be seen as a positive aspect of childminding settings.

It is clear from a whole range of experiences and activities that children in these settings have substantial opportunities for learning about their environment. When the childminders were asked what they thought they offered the children that was unique to their setting, they responded with a variety of colourful examples (see below). Few were genuinely unique and they were predominantly domestically and family bound but the extent to which most of the childminders were sensitive to the intensity children feel over ordinary experiences, and could identify where the learning lay was notable. Domestic chores, visits to the park, shopping expeditions and changing library books were all cited where incidental learning in language, mathematical and knowledge and understanding of the world could take place:

9am We took the double buggy to the park – both boys walked most of the way so it took 30 minutes. We threw bread for the ducks and geese and identified male and female mallards and their ducklings. Sat by the duck pond for a drink and biscuit and collected feathers and talked about which birds they were from. (CM M12 diary) [The children took the feathers home and later made Indian (Native American) headdresses].

Several made reference to learning about animals and plants within or around their childminding setting.

They learn how to be kind to animals by feeding and talking to the rabbits. (CM S04)

They learn to respect animals through being with the family cat. (CM M05)

We tracked the development of the ducklings and cygnets on the pond in the local park. (CM S07)

Just today we were pulling the rhubarb and eating the raspberries in the garden. (CM M12)

Crawling on the pavement looking at a ladybird on the way back from school. (CM S05)

Another common set of positive responses were connected with children mixing with children and adults of different ages via visits, the school run and contacts with family relatives.

We have regular outings and meetings with the others from the Drop-in centre so they see lots of different children and adults. They also talk and play with my two teenage sons when they come in. (CM L10)

According to the CGFS these contacts provide *'time and opportunities to develop spoken language through conversations between children and adults'* (CGFS p44) although further probing is necessary to find out the extent to which the childminders are aware of the specific learning these contacts offer. Nevertheless most childminders are aware of the need for children to talk to adults and many examples are given of asking and paying for things in the shops, chatting to elderly visitors or relatives and sometimes joining in their play.

Domestic activities such as dusting or washing up were also seen as providing useful learning experiences. One example shows where the childminder may have used her training to help her charges understand about pairs.

Ordinary family experiences can be used to develop learning like taking the socks out of the washing machine and pairing them up. (CM L03)

5.6 Relationships with parents

From the child's point of view a successful relationship between the parent and childminder is very important if they are to maintain their sense of well-being and feel secure. All the childminders in this study said that their relationships with parents were positive and sound. There was a general understanding of how the blur of boundaries between their business and personal relationships caused difficulties in these relationships but it was notable that most were able to maintain a balance that worked.

A number of childminders considered themselves to be 'professionals' in providing a service that sometimes became vital e.g. looking after a child overnight while a sibling is born. Pence and Goelman (1991) found that in Canada this understanding of the occupation was associated with high quality childminding practice. Mooney et al (2001) report that the success of any childminding arrangement depends upon the personal relationship negotiated between parents and the childminder. It was clear that the childminders interviewed in this study were aware of this. These attitudes differ sharply from those expressed by childminders interviewed by the Oxford Research Project Team over two decades ago, who then regarded their service as a sideline that had to be fitted around their main commitment of looking after their own families. (Bryant et al. 1980) While it is important to acknowledge the fact that the current study has been of effective childminders, it is also fair to suppose that some part of this change has resulted, not only from different societal circumstances, but also from the founding, growth and influence of the National Childminding Association (NCMA). This organisation has succeeded in increasing the status and confidence of childminders by raising awareness of their role in day-care provision. This has enabled childminders to form more equal and honest relationships with parents and although problems may always arise or remain, contracts can be made that clarify responsibilities. This study suggests this development has positive outcomes for all those involved; the parents, their children and the childminders.

When asked what they thought were the most common problems that occurred between parents and childminders the most frequent responses were about time keeping and payment. This supports in part findings by Mooney et al. although their study included the categories of 'feeling taken for granted' or 'issues over sick children' (Mooney 2001). Other potentially controversial issues that were reported, in the current study included; poor communication, the low status of childminders, and the problem associated with having different attitudes towards e.g. managing behaviour. Being 'taken for granted' was mentioned only once.

While it is again important to acknowledge the fact that these were effective childminders, it was notable that our sample of childminders reported that they were not currently experiencing any problems with parents. But this did not mean that they had not in the past. Many childminders expressed gratitude to their local support networks where they could discuss problems and find solutions, others had found the strategies offered during their training useful. Some had realised that they needed to present a more business-like approach so that parents would not take advantage of them. There was general consensus over the importance of setting ground rules at the contract stage and making firm arrangements over payment.

It was thought important to present and maintain a professional image and it seemed that with some effort this was achieved by all of them at some level. One felt it important that her parents understood that she *'had a life outside childminding with her own interests and commitments'* (CM M05) while another reported that although parents respected her qualified teacher status initially, she had made mistakes by being *'too eager and taking too much on'* with the subsequent result of becoming overworked.' (CM E08)

Childminding was seen to offer advantages over other forms of childcare in that it could be flexible and accommodating when untoward events occurred (e.g. sick children and problems with time-keeping). There were frequent expressions of sympathy to the lot of some parents and pleasure that they could offer support.

I've just had a phone call from a mum who is stuck in a jam on the motorway and is going to be late, well I'm only too happy to get his tea and get him ready for bed if necessary. (CM M10)

5.7 Pedagogy

The childminders were not able to articulate explicitly their pedagogical understandings. However, a detailed analysis of the data revealed that, whilst unarticulated, some good understandings of pedagogy were present. Planning was common although the majority of planned sessions were of the creative variety. More formal learning (writing names, letters and numbers) tended to occur incidentally in response to the children's wishes and generally within a play situation (playing 'school' for example).

Although not explicitly acknowledged it is clear that childminders are aware of the importance of critically assessing their home in order to offer suitable environments for their children. It is clear from the descriptions provided of their settings that extensive thought and planning have gone into providing suitable environments, both in and outside. Definitions of 'suitability' may not, however, be directly linked to their understanding of the CGFS pedagogy. Many provided sand and water facilities and in cases where space was limited (in flats for example) efforts were made to provide alternatives in the local community with local parks and drop-in centres being particular favourites. It was common for a large proportion of their homes to be given up to provide the necessary space.

Children access the downstairs where there is a quiet room, bathroom and toilet and 13 x 12 ft toy room with the toys stored on stacked trays so there is plenty of space to play. There is also a large conservatory which we use as a playroom as well, especially when it rains. If the children need to go to sleep they go upstairs.

(CM S01)

Strong feelings about the importance of play in learning were expressed by all. Time was set aside in all the settings and play was seen as a very important component of the experiences children received within the childminding environment. The different views are summarised later in this section when attitudes to play are described in more detail but it is interesting to note that at least one of our respondents used observation during free play to increase her understanding of her children:

Free play is definitely important. It is a good time to observe and listen, especially when they dress up. (CM S08)

But this example may have also drawn attention to the limitations of this childminder's pedagogical knowledge as, although her setting claimed to provide

elements of more formal learning, there was no evidence to suggest that these observations were used to extend experience or to inform planning.

When asked to talk about the equipment they especially favoured for using with children and why, most childminders expressed a preference for construction toys, role-play equipment and creative resources. The childminders favoured construction toys because they developed physical and co-ordination skills, social skills of sharing and co-operation; cognitive skills such as sorting, matching, counting, weighing and measuring; and increased the imaginative capacity of the children.

Role-play was chosen often because it again enhanced the imaginations of the children and also because it provided opportunities for children to rehearse their coping and independence skills in a safe and secure environment. Additionally, it was felt that role play, along with creative activities, provided a means for children to express their emotions and feelings in a spontaneous and relatively unconstrained way.

As described in the previous section, children had many opportunities to learn through ordinary family activities and childminders clearly responded frequently to children's questions and interests.

Although not articulated in these terms it is clear that the childminders provide settings which are pre-dominantly child-centred. Even though the childminder may have planned activities, they adapt them to a child's interest. There is no clear evidence to suggest how far the childminder could extend the experience. Some respond to children's wishes to copy or finish work brought from school and also ask them what they would like to do each day.

We have a free and flexible programme guided by the children's wishes and the weather. (CM E09)

Flexibility and freedom was cited by 13 (28%) childminders as one of the advantages of this form of childcare. One childminder felt particularly strongly about not 'institutionalising' young children.

There's freedom, not institutionalised and not constantly doing as you are told, or a timetable to be followed all the time. There's room and climate to negotiate, you can 'respond to the day. (CM M16)

Only two childminders organised their settings in a more nursery-style way with timetabled sections and only one of these (S08) seemed to keep strictly to it.

5.8 Planning

Some childminders in the survey were more explicit in their planning than others although, on closer examination of the data almost all worked to a daily and weekly routine. Only one childminder said that apart from the school run, she had no set routines and resisted working to a structured timetable.

The degree of structure depended upon individual personalities and circumstances and many routines were determined by school and nursery timetables. These restrictions were often cited as constraints on some activities and outings. A common finding was the pleasure and satisfaction childminders expressed in the flexibility and autonomy that their employment allowed so that they could respond to the children's wishes.

Within the routines, time was set aside for free play for the children which was seen as a very important component of the experiences children received within the childminding environment. It was also evident that the children spent a large

proportion of their week with other childminders and their children in the local network meeting groups. Additionally, outings were often planned and viewed as an important part of the children's days. Domestic activities, such as preparing and sharing food, were often explicitly timetabled, indicating the significance these activities held for the childminders.

Whilst the childminders in this survey rarely planned explicitly for individual children, they claimed to know their children well, and further probing demonstrated that they were implicitly planning in a flexible way, adapting equipment as necessary for children of different ages and abilities, but with the overall daily and weekly routine structures in mind. Childminders who looked after babies as well as older children said that it was sometimes difficult to plan for and implement more structured activities with the older children in their care. They would often carry out these activities at times when the babies were asleep so that they could spend time enhancing the experiences of the older children. Some said they managed mixed-age groups by choosing activities that could be tackled at whatever age and/or stage of development the children were at, for example painting or sticking. A significant feature was that the interviewees often spoke of the older children helping younger children and supporting them in completing tasks, both in play and in domestic tasks.

5.9 Attitudes towards play in the process of learning

As previously suggested, play was placed as central to the development of learning during the Foundation Stage by all the childminders in this study but this was seen by almost all to mean 'imaginative play'. This narrow conceptualization of play is shared by many other early childhood practitioners for whom play is considered essential, as an activity promoting learning and yet only relevant to some areas of the curriculum. According to Wood and Attfield (1996), despite constant validation from academics (Bruce, 1991; Moyles, 1989) play continues to have an insecure place in delivering the curriculum (Wood and Attfield 1996). The status and value of play, a source of controversy between politicians and practitioners since the Education Reform Act (1998), has been partially substantiated by its inclusion in the *Curriculum guidance for the foundation stage* (CGFS) which states that 'well-planned play, both indoors and outdoors, is a key way in which young children learn with enjoyment and challenge.' (CGFS page 25).

Only one childminder alluded to 'different types' of play learned from her course work. Apart from this example there was little to distinguish between the responses of those who were more trained or qualified and those who were not, although some were clearly baffled initially with the perceived obviousness of the questions about play. Despite the homogeneity of positive opinion towards play a variety of views and insights were expressed. These responses give an indication of the level of understanding of play in relation to pedagogy.

Several saw play as a process of copying behaviour and thus important in learning about life.

They copy adults and in their role-play they act out life as they see it in their minds. *(L05)*

While lunch was prepared and cleared away they played ambulance men as a paramedic had been to the nursery this morning with his appliance. (CM M11 account from diary)

Some felt that it was important not to interfere while others disagreed and thought play needed sometimes to be initiated and could be enhanced by *'getting down to*

their level' (CM M10). There was greater consensus over the adult's role in providing an environment where play could naturally begin and develop.

Learning comes from focusing on providing play experiences. This is largely what I do all the time. (CM E09)

Children soak up experiences like sponges, it is important to offer as many opportunities as possible. (CM M08)

Another strand was the extent to which children were active in their own learning and engaged in play to learn what they needed to know. Lack of time and restrictive timetables were criticised for hindering this process.

Children learn what they need to know through play. Children have got to have time to play, to use their imaginations. Parents and schools offer too packed a timetable, children need their own time to chill out. (CM M11)

Children should be allowed to experiment as much as they can in order to learn. They need to have access to free play and restricted play inhibits learning. (CM S07)

Play was also seen as important for developing character, confidence and self-esteem. Only one childminder identified physical benefits. Fun and enjoyment were also seen as fundamental for 'good' play to occur. Eight (17%) were overtly critical of starting formal learning too early and two mentioned difficulties they had witnessed concerning children who do not seem to engage in play naturally.

They have to learn how to play first. (CM M04)

Some children seem to lack imagination and don't seem to know how to play and are always expecting to go out. (CM E10)

This latter example seems to suggest that children are not being given enough opportunities to develop their own imaginations and resources through play because they are engaged more often in other forms of entertainment and stimulation.

5.10 Attitudes towards and use of ICT

Fifteen (35%) of the childminders made regular use of a computer and encouraged its use with appropriate software for the younger age range, while 10 (23%) either had no computer or disallowed usage. The rest made occasional use and tended not to think it particularly important.

The few who were most enthusiastic about computers were also exploring the use of digital cameras to record outings and use the photographs as a focus for discussions about 'growing' and as a way of 'settling in'.

The most widely used equipment was audio cassette recorders to listen to stories and rhymes and in a few cases to record the children's voices. Play and real phones were widely used in imaginative play, with the use of play mobiles occasionally mentioned.

Childminders were keen to impress that watching television or videos was not encouraged as an end in itself, and it was used only for educational purposes (Teletubbies for example), or for controlled entertainment during quiet times.

5.11 Preparation for school
It appears that the effective childminders in this study felt confident about their role in preparing their charges for school and see it as an important part of their job. Three separate strands appear in this preparation; familiarity, coping skills and early learning experiences presented through a number of pedagogical strategies that occur at varying levels of awareness.

Twenty-two (48%) of the children in this study experience the daily school run to be either dropped off at nursery or with older children which may include the childminder's own. Thus they have opportunities to become familiar with the school buildings, playground and route and a number of childminders were aware of the importance of this without prompting. Several consolidated the experience by talking to the children about school, reading appropriate books about 'big' school and encouraging older children to chat about their experiences at tea-time. Children also gained familiarity through the childminders involvement with the local community.

We have lots to do with the school, we attend mass, go to open days, sports days and assemblies. (CM M04)

One childminder talked about her very close-knit community where everyone was very well known.

The playgroups, nursery and schools are all close by, everyone goes to the same schools so children know the routines at every stage and help each other. (CM M18)

The second strand to this preparation process involved the teaching of skills such as managing fastenings, opening lunch boxes and crisp packets, washing hands and going to the toilet. Children were also made familiar with the mysteries of book bags and dinner money. These skills were often seen as ways of developing independence and also by helping them manage clothes and shoes *to 'take more responsibility for their belongings.'* (CM M11)

Finally there were several examples of 'teaching basic knowledge', identified as knowing the names of colours and counting, holding a pencil correctly, writing their name, sitting and listening to a story, having alphabet and number friezes on the wall. One childminder stressed that this process should not be forced but offered informally.

They should be stretched but not too much, only to what they can just do to give them a feeling of achievement without frustration. (CM L09)

[We must] *help them access school straight away'* [but] *'some of the planned curriculum for very young children is inappropriate.* (CM M01)

5.12 Records
Generally the childminders in our sample gave verbal feedback to parents regularly and sometimes on a daily basis. Seventeen (40%) of the childminders kept records of progress of developmental achievement although 2 (4%) of these were specifically for children with special needs. Four (9%) kept portfolios of children's work and photos taken of events for parents to see and take on completion or when the child left. The quality of record keeping varied from recording only the significant moments of achievement in a child's development to more systematic recording of activities and individual progression.

It appears that training increases the level of awareness to the advantages of keeping records. Three (6%) childminders demonstrated this by mentioning they are beginning to keep 'mental records' and although this lacks specificity it does mark the start of a learning process. Observation techniques have offered insights into child development and abilities but only very few had made significant use of this practice. However, one childminder felt she had benefited particularly in *'not making quick assumptions'* (about children) while another expressed a wish for more assistance in this area with developmental stages and targets for observation presented for use as a standard format (CM E08).

Those with more knowledge and interest in the CGFS are experimenting with recording progress in each of the six areas of learning against listed targets and expected levels of achievement. One childminder recently started making more detailed records on, 'behaviour, moods, progression, achievements and activities', in response to perceived OfSTED requirements (Childminding Guidance to the National Standards CGNS Standard 14). Another, however, whilst acknowledging that the progress diary of one of her children kept as a course exercise taught her the extent of different rates of development she also felt that she could not offer the same for everyone in her care and would be doing them a disservice if she tried (CM E02.) The use of photographs is widespread not only to record events but also to trigger discussion and make children feel part of the family.

Those childminders who do not keep extra records seem confident about not doing so, *'because I know them and have had them since babies'* (CM E10). Some were more positively resistant about developing this professional aspect to their service fearing that it would '*institutionalise the setting'* and not something they would do with their own children. This attitude may well prove significant as providing *'a family environment'* is regarded by the majority of childminders in this survey as having a major advantage over other pre-school settings.

5.13 Advantages

From the variety of advantages cited, and the confidence with which they were given, the majority of childminders had clear opinions on the advantages of their settings over other forms of childcare. Figures are difficult to calculate as most gave more than one reason, but those cited most were the security of the home environment, the structure for maximum one-to-one attention, and the relaxed, free and flexible nature of the childminder setting.

Access to children of different ages was also seen as good for developing social skills and other learning. The provision of constant and continuous care was thought particularly important for babies and toddlers, and was regarded by several as the best form of care for this age range. Opinions varied more in relation to the needs of children at the Foundation Stage where many thought it especially necessary for this age group to access their peers and many ensured such opportunities by attending appropriate playgroups and drop-ins.

Four mentioned the importance of children having access to male role models, three referring to their husbands, adult sons and other male members of the family while the other referred, (as noted above), to himself. The inclusion of this sole male childminder in the survey is slightly misleading in that he worked in partnership with his wife, and so the set-up was not so different from two other settings where wife and husband shared equal responsibilities.

Several childminders felt that the provision was like no other in that it offered valuable support to families who were often in trouble. Those who responded in this way

generally had great sympathy for the families involved and it was clear that they felt glad and relieved that their own lives were more ordered and secure. It was seen that care in their homes could let children know there were alternative (and by implication better) ways to live.

Being here offers children a stable image of family life. (CM M01)

5.14 Constraints

A minority of the childminders talked of the disadvantages of the childminding environment, both for children and for themselves and their families. All of the childminders interviewed, however, were very positive about their work, despite some of the difficulties they encountered.

A small number of interviewees felt that children could not get used to being in larger social groups if exclusively in the care of a childminder, especially in isolated rural areas. One childminder felt that because of certain children's individual personalities a very small number of them 'never settle' outside their own environment.

There are some children that just stay unhappy and need to be brought up at home. (CM 02 East Anglia)

In relation to their own needs, some childminders mentioned the stresses of opening their homes to other people's children for long periods of the day. There were times when the untidiness of toys and the constant encroachment on their private space was a source of irritation. They were also aware of the allowances their own family members made and, although there were no definite expressions of regret or guilt, one childminder did mention that her ten-year-old son had recently expressed some jealously. She felt that he needed more of her attention as 'important physical developments and school issues occur at this age that may need definite and urgent parental support'.

Other studies of people who work at home found that levels of stress can be high due to the difficulties in creating boundaries between a private and public space within the home environment (HUWSU, 1994). For this group of childminders however, the expression of negative attitudes was in the minority. Most perceived the childminder setting as advantageous for children, especially for babies, and enjoyed working from their own homes.

5.15 Conclusion

This study has attempted to discover the extent of pedagogical awareness of effective childminders and the quality of learning opportunities that are provided. It offers an account of provision that appears to satisfy childminders and parents who are engaged in a mutually beneficial arrangement in providing a continuous form of day-care which is flexible and secure. While we must remember that the study only looked at effective childminders, it does look as if the CGFS and other national training and support developments may be beginning to raise the awareness and status of childminders to provide educational opportunities as well as care.

However, this survey is limited to the views of childminders in relation to their circumstances, and no views have been sought from parents or observations made of the children to estimate the effects on these provisions. There is clearly a need to assess the involvement and engagement levels of 'minded' children. This is an especially important issue as earlier studies have suggested a disquieting number of

minded children displaying quiet, passive or withdrawn behaviour at childminder settings (Bryant et al. 1980).

Over the last two decades there have been attempts to improve this sector of childcare with the implicit supposition that the lot of parents and minded children would also improve. A particularly significant development has been the formation and growth of the NCMA that has successfully worked towards providing a range of supportive services for registered childminders. This organisation offers advice and support on issues pertinent to their situation, for example with insurance cover, legal issues, making contracts and policies, tax allowances, tax returns and grant eligibility as well as providing access to local support networks, initial and on-going training. Another important development has been the formation of nationwide local networks aimed to provide personal and professional support, from which the difficult issues and concerns that arise between childminders and parents can be discussed. The network has also served as a conduit for programmes of systematic training. The NCMA and the Council for Awards in Children's Care and Education (CACHE) have jointly produced qualification specifically for childminders, the Certificate in Childminding Practice (CCP) and underpins the knowledge required to gain the National Vocational Qualification (NVQ) in Early Years and Education at Level 3. These qualifications claim to cover the knowledge and skills needed to provide a quality service for children and their families and therefore it is a welcome development. However, although the syllabus contains a number of aspects designed to increase the awareness of childhood behaviour and good educational practice there is less focus on child development within this form of child-care. Assignments tend to be curriculum led with an emphasis on becoming familiar with the CGFS. There is very little emphasis in the syllabus on observations made for other than curriculum planning or the consideration of the psychological well-being of a minded child as recommended by the childminders project conducted by Bryant et al. in 1980.

Forty (85%) of the childminders in this study felt that on-going training was important. When asked what recent training they had been involved in a high proportion mentioned, apart from the NVQ programmes, First Aid, Safety, Childhood Illnesses and Managing Behaviour. The emphasis on these issues echoes Bryant et al's 1980 study that highlighted the inadequacy of past training programmes. Despite huge improvements there still seems to be a reluctance to focus on the feelings and educational needs of the children.

Our findings seem to suggest that providing on-going training and professional qualifications improves the understanding and practice of childminders. Most welcome the opportunity to learn more about the CGFS and ELGs and demonstrate their abilities to offer appropriate learning opportunities. They do however prefer to exercise a level of autonomy over this implementation. Several expressed anxiety over the proposed (now confirmed) OfSTED visits with a few determined to find alternative employment if they felt too pressured by this initiative.

The majority of childminders in the survey worked to some sort of structure and timetable. Very few preferred a totally flexible day. However nearly all liked the autonomy of the job and expressed pleasure at the possibility of responding spontaneously when appropriate. Childminders can at the moment organise their days to suit themselves as well as their charges. They can offer structured timetables or spontaneous flexibility – depending on their personalities. They can *'respond to the day and what the child brings to it.'*

This study has identified several areas for further research. A representative study that goes beyond those considered especially effective is needed. Also a study on the education and welfare of children in childminder settings, and the parent-minder relationships that affect them is particularly pressing. In the spirit of this study it would also be timely to focus on their attitudes to learning, especially in relation to the development of learning dispositions. Finally a study into the interactions between childminders and their children, particularly the extent to which sustained shared thinking, modelling and scaffolding occurs, would be useful in assessing aspects of pedagogical understanding amongst childminders, and could have further implications in future childminding training programmes.

References

Askew, M., Brown, M., Rhodes, V., William, D., Johnson, D. (1997) 'Effective Teachers of Numeracy in Primary Schools: Teachers' Beliefs, Practices and Children' Learning'. *Paper Presented at BERA*, University of York.

Bandura, (1986) *Social Foundations of Thought and Action: A Social Cognitive Theory,* Englewood Cliffs, New Jersey, Prentice Hall.

Baumrind, D. (1971) 'Current patterns of parental authority, *Developmental Psychology Monographs* Vol. 4, No. 4, Part 2.

Bennett, N. and Kell, J. (1989) *A Good Start? Four Year olds in infant schools*, Oxford, Blackwell Education

Bennett, N., Wood, E.A. & Rogers, S. (1997). *Teaching Through Play: Reception Teachers' Theories and Practice.* Buckingham: Open University Press.

Bernstein , B. (1981) 'Codes, modalities and the process of cultural reproduction: a model, *Language and Society*, Vol.10 pp. 327-63.

Bernstein , B. (1996) *Pedagogy, Symbolic Control and Identity: Theory, Research, Critique,* London, Taylor and Francis.

Black, P. and Wiliam, D. (1998) 'Assessment and classroom learning', *Assessment in Education*, 5, 1, pp7-73.

Bosker, R. J. and Scheerens, J. (1994) 'Alternative models of school effectiveness put to the test' in R. J. Bosker, B. P. M. Creemers & J. Scheerens (eds.) *Conceptual and Methodological Advances in Educational Effective Research: Special Issue of the International Journal of Educational Research*, 21 (2), pp.159-180.

Bowman, B., Donovan, S. and Burns, M. (Eds.) (2001) *Eager to Learn: Educating our Pre-schoolers.* Washington D.C.: National Academy Press.

Bronfenbrenner, U. (1979) *The Ecology of Human Development*. Camb, Mass: Harvard University Press.

Brophy, J. and Good, T.L. (1986) 'Teacher behaviour and student achievement' in M.C. Wittrock (ed). *Handbook of Research on Teaching*. NY: McMillan.

Brown, A. and Palinscar, A.S. (1989) 'Guided co-operative learning and individual knowledge' in I.B. Resnick (ed.). *Knowing Learning and Instruction: Essay in Honour of Robert Glaser*. Hillsdale, NJ: Erlbaum.

Bruce, T. (1991) *Time to Play in Early Education* London: Hodder and Stoughton.

Bruner, J.S. (1996). *The Culture of Education*. Camb: Mass: Harvard University Press.

Bryant, B., Harris, M. and Newton, D. (1980) *Children and Minders* Oxford: Grant McIntyre.

Burts, D., Hart, C., Charlesworth, R. and Kirk, L. (1990) ' A comparison of frequency of stress behaviours observed in kindergarten children in classrooms with developmentally appropriate versus developmentally inappropriate instructional practices', *Early Childhood Research Quarterly,* Vol. 5 pp. 407-423

Central Advisory Council for Education (England). (1963). *Half Our Future: The Newsom Report*. London: Central Advisory Council for Education.

Chazan, M., Laing, A. and Harper, G. (1987) *Teaching Five to Eight Year-Olds,* Oxford, Blackwell.

Creemers, B.P.M. (1994) *The Effective Classroom*. London: Cassell.

Creswell, J. (1994) *Research Design: Qualitative and Quantitative Approaches*, Sage, London.

Cross, T.G. (1977) 'Mothers' speech adjustments: The contribution of selected child listener variables' in C.E. Snow and C.A. Ferguson (eds). *Talking to Children: Language Input and Acquisition*. Cambridge: Cambridge University Press.

Davis, A. (1991) 'Piaget, teachers and education' in P. Light, S. Sheldon, M. Woodhead (eds.). *Learning to Think*. Milton Keynes: Open University Press.

Department for Education and Science (1990) *Starting with Quality*. Report of the committee of inquiry into the educational experience offered to 3 and 4 year olds. London: HMSO

DeVries, R. (1997) Piaget's Social Theory, *Educational Researcher* ,Vol. 26(2) March.

Dweck, C. (1991) 'Self-theories and goals: Their role in motivation, personality, and development' in R.A. Dienstbier (ed.). *Perspectives on Motivation*. Nebraska Symposium on Motivation, 1990. Lincoln, NE: University of Nebraska Press, pp. 199-236.

Dweck, C.S., and Leggett, E.L. (1988) 'A social-cognitive approach to motivation and personality' in *Psychological Review*, 95(2), pp.256-273.

Employers' Organization/Improvement and Development Agency (1999) *Registered Childminders Workforce Survey 1998*. London: EO/IdeA.

Flavell, J. (1976) Metacognitive aspects of problem solving. In Resnick, L. (Ed.) *The Nature of Intelligence*. Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Franklin, M. (1999) *Meaning of Play in the Developmental Interaction Tradition*, New York: Sarah Lawrence College.

Gage, N. (1985) *Hard Gains in the Soft Science: The case of pedagogy*, Phi Delta Kappa CEDR Monograph, Bloomington, Indiana.

Gipps, C., McCallum, B., Hargreaves, E. (2000) *What Makes a Good Primary School Teacher? Expert Classroom Strategies*. London: Falmer.

Goldstein, H. (1987) *Multilevel Models in Educational and Social Research*. London: Charles Griffin & Co.

Goldstein, H. (1997) 'Methods in School Effectiveness Research' in *School Effectiveness & School Improvement*, 8 (4), pp.369-395.

Goncu, A. and Rogoff, B. (1998) 'Children's categorization with varying adult support' in *American Educational Research Journal* 35(2), pp. 333-349.

Harris, A. (1999) *Teaching and Learning in the Effective School.* Aldershot: Ashgate Publishing.

Harris, A., Jamieson, I.M. and Russ, J. (1996) *School Improvement and School Effectiveness: A Practical Guide*. London: Pitman Press.

Harms, T., Clifford, M. & Cryer, D. (1998) *Early Childhood Environment Rating Scale, Revised Edition (ECERS-R)* Teachers College Press.

Hay McBer (2000) 'Research into Teacher Effectiveness: A Model of Teacher Effectiveness'. *Research Report 216,* London: DfEE.

Hegarty, S (2000) 'Teaching a knowledge-based activity' in *Oxford Review of Educational Research*, 26, (3&4), pp,451-465.

Hohmann, M. and Weikart, D.P. (1995) *Educating Young Children*. Michigan: High/Scope Educational Research Foundation.

House of Commons Select Committee on Early Learning (2001) *Report* HMSO.

Hoy, W.K. and Miskel, C.G. (1987) *Educational Administration: Theory, Research and Practice (3rd Edition)*. New York: Random House.

HUWSU (1994) *Key Results from the National Survey of Homeworkers*. Leeds: National Group of Homeworking.

Karnes, M., Schwedel, A., and Williams, M. (1983) 'A comparison of five different approaches for educating young children from low-income homes' in *Consortium for Longitudinal Studies,* As the twig is bent…Lasting effects of pre-school programmes, Hillsdale, Erlbaum, pp133-170.

Katz, L.G. (1985) *Dispositions in Early Childhood Education*. ERIC/EECE Bulletin 18(2), pp.1-3.

Katz, L.G. (1992) *What Should Young Children Be Doing*? ERIC Digest. Urbana, IL: ERIC Clearinghouse on Elementary and Early Childhood Education, University of Illinois.

Katz, L.G. and Raths, J.D. (1985) 'Dispositions as goals for teacher education' in *Teaching and Teacher Education*, 1(4), pp.301-307.

Kohlberg, L. and Mayer, R. (1972) Development is the aim of education, *Harvard Education Review*, Vol. 42, No. 4, pp449-496.

Kolb, D.A. (1984) *Experiential Learning*. New York: Prentice Hall.

Lave, J. (1991) 'Situating learning in communities of practice' in L.B. Resnick, J.M.

Laevers, F. (1995) *An exploration of the concept of involvement as an indicator for quality in early childhood education*, Dundee, Scottish Consultative Council on the Curriculum.

Lazar, I., Darlington, R., Murray, H., Royce, J. and Snipper, A. (1982) Lasting Effects of Early Education: A report from the consortium of longitudinal studies. Monographs of the Society in Child Development, Vol. 47, 2-3, Serial No.195.

Leach, J. and Moon, B. (1999) *Learners and Pedagogy,* London Paul Chapman/The Open University.

Levine and S.D. Teasley (eds). *Perspectives on Socially Shared Cognition*. Washington: American Psychological Association.

Meadows, S. (1994). *The Child As Thinker: The Development and Acquisition of Cognition in Childhood*. London: Routledge.

Medwell, J., Wray, D., Poulson, L. and Fox, R. (1998) *Effective Teachers of Literacy. Final Report to TTA,* School of Education, Exeter University.

Melzi, G. (2000). 'Cultural variations in the construction of personal narratives: Central American and European American mothers' elicitation styles', in *Discourse Processes*, 30(2), pp.153-177.

Miles, M. and Huberman, A. (1994) *Qualitative Data Analysis*, Sage, London.

Miller, R. and Bizzell, R. (1983) 'The Louisville experiment: a comparison of four programmes' in *Consortium for Longitudinal Studies,* As the twig is bent…Lasting effects of pre-school programmes, Hillsdale, Erlbaum, pp171-199.

Mooney, A., Knight, A., Moss, P. and Owen, C. (2001). *Who Cares? Childminding in the 1990s*. London; Joseph Rowntree Foundation.

Moriarty, V. and Siraj-Blatchford, I. (1998) *An Introduction to the Curriculum 3-5,* Ticknell: Education Now Books.

Mortimore, P (1993). 'Managing teaching and learning: The search for a match', in M. Busher and M. Smith (eds.). *Managing Educational Institutions.* Sheffield Papers in Educational Management: University of Sheffield.

Mortimore, P. (1991). 'School effectiveness research: which way at the crossroads?' in *International School Effectiveness and School Improvement*, 2(3), pp.213-29.

Mortimore, P. (Ed.) (1999) *Understanding Pedagogy and its impact on learning*, London, Paul Chapman Publishing.

Moyles, J. (1989) *Just Playing? The role and status of play in early education*. Buckingham: Open University Press.

Pascal, C. and Bertram, T. (1997) 'A conceptual framework for evaluating effectiveness in early childhood settings', in *Researching Early Childhood 3*, Settings in Interaction, Goteborg University, Early Childhood Research and Development Centre.

Pascal, C. and Bertram, T. (1999) Accounting Early for Lifelong Learning, in Abbott, L., and Moyelett, H. *Early Education Transformed*, Falmer Press.

Pelligrini, A., Galder, L and Dresden, J. (1991) 'A Longitudinal Study of the Predictive Relations among Symbolic Play, Linguistic Verbs, and Early *Literacy' Research in the Teaching of English* 25, 2, pp. 219-235.

Pence, A.R. and Goelman, H. (1991). 'The relationship of regulation, training and motivation to quality of care in family day care.' *Child and Youth Care Forum*, 20 (20), pp.83-101.

Porter, A.C. and Brophy, J. (1988). 'Synthesis of research on good teaching: insights from the work of the Institute for Research on Teaching' in *Educational Leadership,* 46, pp.74-85.

Pramling, I. (1983) *The Child's Conception of Learning*, Goteborg, Acta Universitatis Gothoburgensis.

Pramling, I. (1990) *Learning to learn: a study of Swedish pre-school children*, New York, Springer-Verlag.

Puttnam, R.T. & Borko, H.B. (2000). 'Teacher Learning: Implications of new views of cognition' in Biddle, B.J., Good, T.L. & Goodson, I.F. (eds.). *The International Handbook of Teachers and Teaching.* Dordrecht, The Netherlands: Kluwer.

Qualifications and Curriculum Authority/Department for Education and Employment (2000). *Curriculum guidance for the foundation stage – Stepping Stones.* London: QCA/DfEE.

Qualifications and Curriculum Authority (1999). *The Early Learning Goals*. London: QCA.

Resnick, L. B. (1987). *Education and Learning to Think*. Washington, DC: National Academy Press.

Reynolds, A. J., Temple, J. A., Robertson, D. L., Mann, E. A. (2001). Long-term effects of an early childhood intervention on educational achievement and juvenile arrest- A 15-year follow-up of low-income children in public schools. *Journal of American Medical Association, 285*(18), 2339-2346.

Roberts, R. (1998) 'Developing Personal and Social Education in the Early Years' in Siraj-Blatchford, I. (Ed) *A Curriculum Development Handbook for Early Childhood Education*, Stoke on Trent: Trentham Books.

Rogers, C. (1983) *Freedom to Learn,* Columbus, Merrill

Rogoff, B., Mistry, J.J., Goncu, A. and Mosier, C. (1993). 'Guided participation in cultural activity by toddlers and caregivers. *Monographs of the Society for Research in Child Development*, 58 (7, Serial No. 236).

Rumbold Report (DES 1990) *Starting with Quality* London: DES.

Sadler, R. (1998) 'Formative assessment: revisiting the territory'*, Assessment in Education,* 5, 1, pp. 77-84.

Scheerens, J. (1992). *Effective Schooling: Research, Theory and Practice*. London: Cassell.

Shulman, L. (1986) 'Those who understand: knowledge growth in teaching', *Educational Researcher* 15(2) pp.4-14.

Schwartzman, H. (1978) *Transformations: the anthropology of children's play*. New York: Plenham Press.

Scottish Education Department. (1992). *Using Ethos Indicators in the Primary and Secondary School*. Edinburgh: Scottish Education Deptment.

Schweinhart, L.J., Barnes, H.V. & Weikart, D.P. (1993). *Significant Benefits: The High/Scope Perry Preschool Study through Age 27*. Michigan: High/Scope Educational Research Foundation.

Schweinhart, L.J. & Weikart, D.P. (1997). 'The High/Scope Preschool Curriculum Comparison through Age 23' in *Early Childhood Research Quarterly*, 12, pp. 117-143.

Siraj-Blatchford, I. (1999) 'Early childhood pedagogy, practice, principles and research' in P. Mortimore (Ed) *Understanding Pedagogy and its Impact on Learning*. London: Paul Chapman.

Siraj-Blatchford, J. and Siraj-Blatchford, I (2000) *ICT subscale*, unpublished. Faculty of Education, University of Cambridge.

Siraj-Blatchford, J. and Siraj-Blatchford, I (2002*) Evaluation of Phase 1 of the KidSmart Initiative* London IBM White Paper.

Siraj-Blatchford, I., Sylva, K., Melhuish, E., Sammons, P. and Taggart, B. (1999) *EPPE Technical Paper 3 Contextualising the EPPE Project*, University of London, Institute of Education/DfEE.

Siraj-Blatchford, I. and Sylva, K. (2000) *Effective Pedagogy in the Early Years*, Unpublished proposal to the DfEE.

Siraj-Blatchford, I., Sylva, K., Taggart, B., Sammons, P. and Melhuish, E. (2002) The *EPPE case studies Technical Paper 10* University of London, Institute of Education/DfEE (forthcoming).

Stremmel, A.J. (1993). 'Responsive Teaching: A Culturally Appropriate Approach' in V.R. Fu, A.J. Stremmel and C. Treppe (eds.). *Papers from the European Forum for Child Welfare and NAEYC Conferences,* Hamburg and Denver 1991 and 1992.

Sylva, K. and Nabuco, M. (1996) Research on Quality in the Curriculum, *International Journal of Early Childhood.*

Sylva, K., Siraj-Blatchford, I., Sammons, P., Melhuish, E. and Taggart, B. (1999) *EPPE Technical Paper 6.*

Sylva, K., Siraj-Blatchford, I., and Taggart, B., (1998). *The Early Childhood Environmental Rating Scale*: *4 Curricular Subscales*. London: Institute of Education.

Sylva, K. and Stevenson, J. (Eds). *Assessing children's social behaviour and competence*, NFER Nelson. Sylva, K. (1997) *The Target Child Observation*.

Sylva, K., Roy, D. and Painter, M. (1980) *Childwatching at Playgroup and Nursery School*. Oxford: Blackwell.

Sylva, K., Hurry, J., Mirelman, H., Burrell, A. and Riley, J. (1999) *Evaluation of a focussed literacy teaching programme in Year 1 reception classes: Classroom observations*. British Educational Research Journal 25, 5, pp. 617-635.

Tharpe, R. G. and Gallimore, R. (1988). *Rousing Minds to Life*. Cambridge: Cambridge University Press.

Tizard, B. and Hughes, M. (1984). *Young Children Learning: Talking and Thinking at Home and School*. London: Fontana.

Vygotsky, L. (1978). *Mind in Society*. Cambridge: Harvard University Press.

Wells, G. (1985). *Language, Learning and Education*. Windsor: NFER/Nelson.

Weikart, D. (1972) 'Relationship of curriculum, teaching, and learning in pre-school education' in Stanley, J. (Ed.) Preschool Programmes for the Disadvantaged, Baltimore, John Hopkins University Press.

Weikart, D. (2000) *Early Childhood Education: Needs and Opportunity*, Paris, UNESCO: International Institute for Educational Planning.

Wood, D. (1986). 'Aspects of teaching and learning' in M. Richards and P. Light (eds) *Children of Social Worlds*. Cambridge: Polity Press.

Wood, D. (1988). *How Children Think and Learn*. Oxford: Blackwell.

Wood, D. and Wood, H. (1996). 'Vygotsky, Tutoring and Learning' in *Oxford Review of Education*, 22(1), pp.5-16.

Wood, E., and Attfield, J. (1996) *Play, Learning and the Early childhood Curriculum* London: Sage.

Wood, E. & Bennett, N. (2000). 'Changing theories, changing practice: Early childhood teachers' professional learning' in *Teaching and Teacher Education*, 16(5), pp.635-647.

Wray, D., Medwell, J., Fox, R., Poulson, L. (2000). 'Teaching reading: lessons from the experts' in *Reading*, April, pp.17-22.

Wylie, C. (1998) *Competent Children Study National Council for Educational* Research in New Zealand.

Zigler, E. and Styfco, S. (2001) 'Extended childhood intervention prepares children for school and beyond' in Journal of the American Medical Association, Vol 285, No 18 pp2378-2380.

Appendix 1 - Questionnaire to manager /head of centre/setting

All answers are treated in the strictest confidence and no names of children, staff or centres are ever used in the research. June 2001

About you and the setting

Gender_____ Ethnicity_____ Age

Staff member (please state your title, e.g. headteacher, teacher, playgroup leader etc.)

Your highest qualification (prompt EYs qualification)

INSET courses you have attended in the last 18 months (how much of this training has been on-site?)

Your main responsibilities in the setting

What training would you like to be offered in the next year?

How long have you been in post?

How long have you been working with the EYs group?

What is the ratio of adults to children 3-5 in your setting?

Do you think this is a good ratio to optimise learning or could it be higher or lower?

How would you describe the background characteristics of the children in your setting?

About the curriculum/pedagogy

1 Has the Curriculum guidance for the foundation stage (CGFS) influenced your setting? If so, how?

2 In your view, are there any gaps in the curriculum you deliver, which you would like to fill e.g. ICT, music etc?

3 Has the CGFS influenced the:

-	Curriculum	How?	-	Style of teaching	How?
-	Planning	How?	-	Resources	How?
-	Assessment	How?	-	Organisation	How?

(Please state how and if this is different from the influence of the DLOs)

4 Has the CGFS influenced the way children play and how they learn in your setting?

5 Has the CGFS influenced parents' expectations in any way?

6 How do you involve parents in their children's development?

7 Has the CGFS influenced equal opportunities in any way in terms of SENs, gender, social class and ethnicity? *(Please give examples for questions 4 to 7)*

8 Has the CGFS influenced the pace, timing or variety of activities you offer?

9 Has the CGFS influenced the time children spend in free play?

10 Has the CGFS influenced the way you monitor continuity and progression in children's learning?
Prompt for 8, 9 & 10 What did you do and how has this changed? With examples.

11 If you could prioritise 3 things you hope the children learn from your setting (e.g. in terms of domains of knowledge, attitudes/dispositions, skills) what would these be?

12 What kinds of resources help children to learn and why?
(e.g. outdoor area, worksheets, construction materials, sand etc.)

13 What do you think are the main constraints/barriers to learning?

14 In your opinion how often does the staff when working with the 3-5s, use the following behaviours (or techniques)?

Tick:	**Never**	**Hardly ever**	**Some-times**	**Often**	**All the time**
Respond to children					
Discuss things with children					
Record children's achievements					
Observe children					
Demonstrate good values to children					
Demonstrate appropriate language use					
Criticise children					
Encourage children					
Collaborate with children					
Encourage children					
Encourage collaboration with each other					
Play alongside children					
Teach children					
Acknowledge children's statements					
Affirm and praise children					
Answer children's questions					
Ask children questions					
Shout at children					
Have high expectations of children					
Assess children					
Reprimand children					

Explain to children					
Listen to children					
Correct children					
Have conversations with children					

15 How does your setting encourage children to persevere with activities that they find difficult?

16 What strategies are used in your setting to engage the children in more extended dialogue?

17 How does your setting extend children's thinking?

18 Are the children involved in setting their own learning goals? If so, how is this achieved?

19 How does your setting record the children's progress?

20 What do you think is the correct balance between teacher led and child led activities to optimise learning? How is this achieved in your setting?

21 What would improve CGFS?

Transitions

1 Do the older children receive any special teaching/curriculum/group work to prepare them for school (in the case of a reception class for Year 1)? If so what and how?

2 What do you consider children need to make a good start in school?

Use of Information and Communication Technologies (ICT)

1 How do you understand the term Information and Communications Technology (ICT)?

2 Do you have a policy on ICT or a policy that includes ICT? (can I take a copy?)

If yes: Do you have an ICT development plan? (Take a copy)

3 Does your policy/provision differentiate for children over /under 3? In what ways?

4 Have any members of the staff received any specialist training in ICT? If yes: What sort of training? (Prompt: e.g. basic operational skills/ curriculum development)

5 What are most commonly used software programmes?

6 What criteria do you apply in selecting software?

7 What, if anything, do you consider children learn from their use of the computer?

8 Is the computer used to deliver the Foundation Stage curriculum? If so what and how?

9 Do you have a computer at home? If yes, what use do you make of it?

10 How comfortable/confident are you in using a computer?
- Very comfortable
- Comfortable
- Not too comfortable
- Uncomfortable

Please state why?

11 What (if any) ICT training have you received? Did you find this training:
- Very helpful
- Somewhat helpful
- A little helpful
- Not very helpful

What (if any) training would you like to see available for ICT?

Thank you.

Appendix 2 - Questionnaire to teacher/educarer

All answers are treated in the strictest confidence and no names of children, staff or centres are ever used in the research. June 2001

About you and your setting

Gender_____ Ethnicity_____ Age_____

Staff member (please state whether you are a nursery officer/nurse, teacher or other title

Your highest qualification (prompt – EYs qualification)

INSET courses you have attended in the last 18 months (how much of this training has been on-site?)

Your main responsibilities in the setting

Do you supervise other staff?

What training would you like to be offered in the next year?

How long have you been in post?

How long have you been working with the EYs group?

What is the ratio of adults to children 3-5 in your setting?

Do you think this is a good ratio to optimise learning or could it be higher or lower?

How would you describe the background characteristics of the children you work with?

About the curriculum/pedagogy

1 What areas of curriculum does your setting cover? Please explain how these are influenced by the Curriculum guidance for the Foundation Stage (CGFS)?

2 In your view, are there any gaps in the curriculum you deliver, which you would like to fill e.g. ICT, music etc?

3 Has the CGFS influenced your: (Please state how and if this is different from the influence of the DLOs)

- Curriculum How?
- Planning How?
- Assessment How?
- Style of teaching How?
- Resources How?
- Organisation How?

4 Has the CGFS influenced the way children play and how they learn in your setting?

5 Has the CGFS influenced parents' expectations?

6 How do you involve parents in their children's development?

7 Has the CGFS influenced equal opportunities in any way in terms of SENs, gender, social class and ethnicity? *(Please give examples for questions 4 to 7)*

8 Has the CGFS influenced the pace, timing or variety of activities you offer?

9 Has the CGFS influenced the time children spend in free play?

10 Has the CGFS influenced the way you monitor continuity and progression in children's learning?
Prompt for 8,9& 10 What <u>did</u> you do and how has this changed? With examples.

11 If you could prioritise 3 things you hope the children learn from your setting
(e.g. in terms of domains of knowledge, attitudes/dispositions, skills) what would these be?

12 What kinds of resources help children to learn and why?
(e.g. outdoor area, worksheets, construction materials, sand etc.)

13 What do you think are the main constraints/barriers to learning?

14 How often, when working with the 3-5s, do you use the following behaviours or techniques?

Tick:	**Never**	**Hardly ever**	**Some-times**	**Often**	**All the time**
Respond to children					
Discuss things with children					
Record children's achievements					
Observe children					
Demonstrate good values to children					
Demonstrate appropriate language use					
Criticise children					
Encourage children					
Collaborate with children					
Encourage collaboration with each other					
Play alongside children					
Teach children					
Acknowledge children's statements					
Affirm and praise children					
Answer children's questions					
Ask children questions					
Shout at children					

Have high expectations of children					
Assess children					
Reprimand children					
Explain to children					
Listen to children					
Correct children					
Have conversations with children					

15 How do you encourage children to persevere with activities that they find difficult?

16 What strategies are used to engage the children in more extended dialogue?

17 How do you extend children's thinking?

18 Are the children involved in setting their own learning goals? If so how?

19 How do you record progress?

20 What do you think is the correct balance between teacher led and child led activities to optimise learning? How do you achieve this?

21 What would improve the CGFS?

We would like you to describe the sort of activity you consider to be most effective in supporting children's learning. These may be pre-planned or occur spontaneously in the course of children's play.
(Please use a separate sheet of paper if you need more space)

Example 1. A pre-planned learning activity or interaction

Time of day:

Number of children involved please give range of ages:

Number of adults involved:

Area of learning:

Account of the activity or interaction:

Was it planned? How?

Was it assessed? How?

How often do such activities/interactions occur in the setting daily?

Example 2: A spontaneous learning activity or interaction

Time of day:

Number of children involved please give range of ages:

Number of adults involved:

Area of learning:

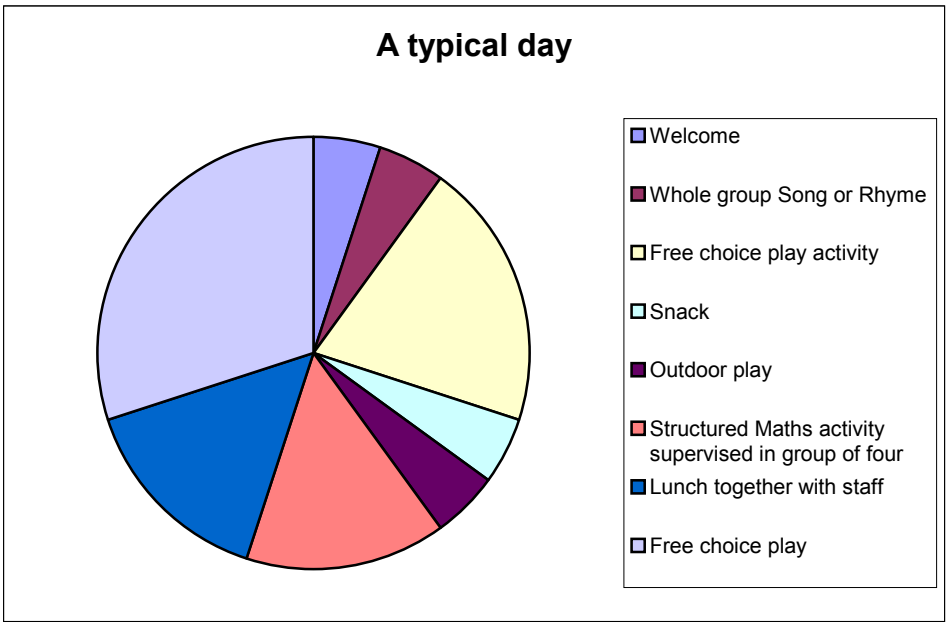
Account of the activity or interaction:

Was it assessed? How?

How often do such activities/interactions occur in the setting daily?

In a Circle/Pie Chart (example provided) please give a rough indication of the structure of a typical day's experience for a child (but feel free to use your own headings, please do one for a 3 and 4 year old, if different). Please state whether it is a full day or a half-day session:

Settings will have different activities that break up the day so you will need to provide your own labels.



Please hand draw this on a separate piece of paper as an example to show a typical day.

Transitions

1 Do the older children receive any special teaching/curriculum/group work to prepare them for school (in the case of a reception class for Year 1)? If so what and how?

2 What do you consider children need to make a good start in school?

Use of Information and Communication Technologies (ICT)

1 Do you have a computer/s in the centre/class? How many? What type?

2 What, if anything, do you consider children learn from their use of the computer?

3 Is the computer used to deliver the Foundation Stage curriculum? If so what and how?

4 What are the most commonly used software programmes?

5 Do you feel that ICT (e.g. telephones/fax/TV/computer/) can be positively integrated with other activities? If yes, how? (e.g. during socio-dramatic play?)

6 Do you have a computer at home? If yes, what use do you make of it?

7 During an average week what percentage of the time available do you estimate the computer is being used? In what way?

8 How comfortable/confident are you with the computer in your classroom?

- Very comfortable
- Comfortable
- Not too comfortable
- Uncomfortable

Please state why?

9 What (if any) ICT training have you received? Did you find this training:

- Very helpful
- Somewhat helpful
- A little helpful
- Not very helpful

What (if any) training would you like to see available for ICT?

10 How much of the time spent by the children on the computer is supervised by an adult sitting with the children? (__% approximately) What kind of support is provided?

11 Do the children generally work alone or in groups? (No. in typical group?)

12 Do the children collaborate or simply take turns?

13 Do girls and boys make equal use of the computers?

14 What do you think is the impact of ICT on children's learning/ development.
Please state any advantages and/or disadvantages.

15 Do you have any further comments about children' work with the computer?

Thank you

Appendix 3 - Childminder Interview

Date
ID

Personal details
Age
Gender
No. of years in childminding
Qualifications/training
Reason for being a CM
Job before childminding

Setting
Children:
No. altogether: Part time: Full time:
Ages
Times of 3 – 5 year olds
Time work starts
Time work finishes
Ratios on a typical day early am: pm: after school:
Facilities on offer
Indoors / Outdoors:

Planning 1
Typical daily routine
Mon. am pm
Tues. am pm
Wed. am pm
Thurs. am pm
Fri. am pm

Curriculum knowledge
Do you think ongoing professional training is desirable/important?
Have you been involved in any training programmes recently?
Are you involved in any at the moment?
What do you know about CGFS and ELGs?
Have you received any information or training about CGFS and ELGs?
Would you like future training on the above?
Constraints on training e.g. time, opportunities, anything else?

Planning 2
What aims do you have for your children?
How do you help them settle in?
Do you prepare them for school in any way?
What equipment /toys do you favour in particular and why?
Where do you get your ideas for activities from?
Do you use/have access to magazines or educational journals, e.g. Nursery World, Nursery Education?
What constraints do you experience when planning for activities?
Do you plan for individual children?
How do you cater for mixed ages, mixed ability and mixed interests?
Do you experience problems planning for these groups?
How much outdoor play do you allow the children?

Do you go on outings? Where?
Is your planning influenced by CGFS?
How?
What is your attitude towards play and its place in learning?
Do you have any suggestions for improving the CGFS?

Information and Communications Technology (ICT)
Do you use any ICT equipment in your setting? e.g. computer, camera, video and cassette recorders, CD, telephones.
How are they used?

Behaviour
How do you manage behaviour problems?
How do you fit your management with parental wishes?
How do you develop social skills?
How do you develop their personal care skills?

Support
Are you a member of the NCMA?
Do you feel supported by the organisation?
Do you belong to any local support groups?
If so what support do you receive?
Do you receive help/support from neighbours and/or relatives?
What is the role of the local authority and/or EYDCP?
How useful/supportive are they or have they been?

Keeping records
Do you keep records of the children? e.g. activities, behaviour, mood?
Do you keep records of their development/progress?
Is so, how?
How do you manage children with special or specific needs?

Unique experiences
Do you provide any special or unique experiences for your children which they would probably not have in other types of Early childhood provision?

Parental relationships
How do you make parents feel happy and secure about leaving their children with you?
What do you think are the most common problems between childminders and parents?
Do parents often ask for childcare advice?

Finally-
What can the childminding setting offer a child that has advantages over other pre-school settings?
Any disadvantages?
Diary
Arrangements for collection

Thank you

Appendix 4 – Semi-structured parent interview as part of the EPPE case studies

How long has your child been at the centre?

What did you know about the centre before you admitted your child, how did you know this?

What information were you given and how? E.g. through a home visit.

Was there any expectation of you in relation to your role as a parent? E.g. to ensure your child was toilet trained, visits to the centre, parent interview for records etc.

How does the centre communicate with you and how often? E.g. is there a 'key persons system' so you have an allotted adult, or parent evenings, written circulars etc?

How is your child's progress and development reported to you?

How often do you visit the centre and why?

What kinds of involvement does the centre encourage? E.g.

- as helper/volunteer, assistant to a trained adult, centre visits, fund raising;
- to attend workshops or other parent training;
- other forms of parent education;
- parent support for families under stress.

What kind of involvement do you have in your child's learning at home? What proportion of this is adult/child-initiated?

How much of this is supported by the centre? Give examples.

What opportunities do you have to get involved in the decision-making processes in the centre? E.g. through a PTA. Management/governing committee etc.

Are you ever asked to comment on the curriculum, assessment or other policies of the centre, is so, how?

What do you think your child gets out of attending this centre?

What do you think makes a centre effective?

What do you get out of it? What do you do while your child is at the centre? E.g. Have a break, study, employment.

Is there anything you would change about this centre?

Any other comments? Thank you

Appendix 5 - Target Child Observation (TCO)

This was based upon the Target Child Observation (Sylva, Roy, and Painter 1980; Sylva, 1997), which describes the behaviour of an individual child for 20 minutes during a randomly sampled time during the day at pre-school. It uses both time and event sampling to record an individual child's social grouping and participation, the individual child's activity, the individual child's curricular experience, and the interactions of any adults present, and notes any educare training which the adult may have.

An observer follows an individual child for one observation of 20 minutes, which is then divided into 30 second intervals. Each 30 second interval is categorised in four different ways:

- Main curriculum area which the child is experiencing (Time sampled).
- Social context, including if an adult is present and their level of educare training (Time sampled).
- Childs learning activity (Time sampled).
- Adult pedagogical interactions (Event sampled).

For each observation, further information was also recorded for use in analysing longer episodes. This includes who initiated the activities which the child took part in, the level of cognitive challenge of the child's activity, and what provided a 'critical point' (which influenced the development of the activity). This is fully described in Appendix 6.

Target Child Observation Sample Details

The Target Child Observation sample consisted of 12 Foundation Stage settings from the 14 identified case-study centres. All had been identified as having effective practice by the EPPE study apart from the 2 Reception classes which were identified by Early Years Advisors. These were:

1 Playgroup
2 Nursery classes
2 Nursery schools
2 Private day nurseries
2 Combined centres (Both were Early Excellence centres)
1 Day care centre – Social services
2 Reception classes (identified by Early Years Advisors)

In each setting about 20 children were observed during a week's visit at randomly selected intervals during the day. The researcher aimed to observe six children during a whole day session.

Target Child Observation instrument categories

Curriculum area
A record of which area of the Foundation Stage curriculum the target child is experiencing through the activity in which they are engaged. Coded by time-sampling for each 30 second interval.

Social context
How many peers there are in the target child's grouping, these include *alone or in a 1:1 situation with a practitioner*, *pair* of children, *small group* (3 to 8 children), and *whole class* activity (9 or more children).

If a practitioner is present in the group, what qualifications they have is also recorded. Distinctions are made between *level 5* practitioners, *level 2-4* practitioners, and *adults* who have no educare training.

The target child is also coded for whether or not s/he is 'interacting' with other persons or is 'parallel' to them. The child would be coded as not interacting if s/he was acting in parallel, e.g. counting in unison with other members, or dancing the same steps of the social group.

These items were all time-sampled for each 30 second interval.

Learning activity
50 codes were initially devised to create a detailed description of the activity in which the target child is engaged. These codes were grouped into related categories to make 15 main child activities (see below). When it was apparent that children were engaged in behaviour covered by more than one 'learning activity code' multi-coding was implemented.

The 15 grouped categories are as follows:

- *Games*: This included informal games, and games with rules.
- *Pretend*: Included instances when children where involved in pretend play (the transformation of everyday objects, people, or events so that their 'meaning' takes precedence over 'reality') and children's use of scale version toys.
- *Movement*: Large muscle movement, purposeful movement (actively moving from one activity to another or towards a person or object), and cruising (actively looking around for something to do).
- *Manipulation*: Activities which involved the mastering and refining of manual skills requiring coordination of the hand/arm and the senses (handling sand, dough, clay, water, or arranging and sorting objects).
- *SM/CON*: Structured material (the use of materials with design constraints e.g. jigsaw puzzles, peg boards, bead-threading), large scale and small-scale construction.
- *Empty*: This included times when the child was 'standing around gazing' with no interest in any activity, as well as times when the child was 'waiting' for either an adult, or another child.
- *Domestic activity*: This included children using the bathroom, changing shoes, and lunch or snack times.
- *Observation*: Includes task related and non-task related observation.
- *Art and music*: Includes 'Singing songs', 'Playing instruments', 'Dancing and movement', 'Drawing', 'Painting', 'Cut and pasting' which are all free expression activities, and sometimes 'Adult directed art and manipulation'. (When the child is mastering or refining skills and techniques under adult direction, and sometimes with an adult-determined end product (e.g. tracing).
- *Mathematics*: Includes activities involving 'calculations', 'number symbols' or 'number concepts'.
- *Reading/writing/listening*: reading activities include: looking at books, reading sounds, reading individual words, reading text. Writing activities include; pretend

writing, copying letters, writing individual letters independently, writing individual words. Active listening activities include; adult reading, listening to a form of media with a literacy focus, other child reading, listening to an adult organise and allocate tasks.

- *Examination and exploring*: when children are engaged in 'examining' objects, or instances when a child is 'problem-solving'.
- *Adult-led*: Includes adult-led unison activities when the target child is part of a group of children under the firm leadership of an adult, and in which the child usually responds in unison with others. This also includes 'cooking'.
- *Social talk*: This includes when a child is interacting with another child or adult in either a social conversation, or a conversation which is not related to the activity which the child is engaged. However, if the conversation was task-related then it would be coded as part of the child's learning activity code, e.g. if the target child is completing a jigsaw and talking to a child sat beside them about the jigsaw they would be coded as 'SM/Con'.
- *Computing*: This includes the target child computing or watching another child compute.

Adult's pedagogical interactions
These codes were used for the systematic observations and are divided into two areas: cognitive and social interactions.

The cognitive codes are divided into sustained shared thinking interactions, direct teaching interactions and monitoring.

- The sustained shared thinking interactions include *scaffolding*, *extending*, *discussing*, *modelling*, and *playing*.

Scaffolding is an interaction which requires the teacher to know the target child's level of knowledge, and to stretch his/her abilities through a series of questions or comments in order to take the child to a higher level of knowledge than s/he would have had before.

Extending is generally a quicker interaction when the practitioner makes a suggestion to allow the child to see other possibilities in the activity in which s/he is taking part. For example the target child is arranging farm animals within a fence, the practitioner approaches and asks how the animals will get out. This then encourages the child to consider the need for a gate within the fence and his/her play takes a new direction.

Discussing means that the practitioner must have a prolonged discussion with the target child. It is more than a series of questions from adult to child, but allows an interchange of information or ideas.

Modelling includes the demonstration of activities accompanied by the child's attention and interest as well as a verbal commentary from the adult.

Playing is the adult using humour or playing with the target child.

- The direct teaching pedagogical interactions are simple *questioning*, *description of the activity*, didactic *instruction*, *task management* and *reading* to the target child, *organising and allocating* tasks.

The monitoring pedagogical interactions include:

- The practitioner is *observing* the target child.
- The practitioner was *available* to the target child in their social context.

The socially related pedagogical interactions include:

- *Encouragement.*
- *Behaviour management* such as ‘sit still’, and reprimanding the target child.
- *Social* conversation with the target child which is not related to the activity which the child is a part of.
- Physical *caring* for the child which also includes cuddles and sitting on knees.

Appendix 6 - Episode analysis of the Target Child Observations (TOCs)

141 TCOs were analysed from the 7 settings for which there was sufficient time. Efforts were made to select 7 which broadly represented the full sample of case study settings. The TCOs had been carried out at randomly selected intervals during the day, and the episode chosen for analysis was the first coherent learning episode with a clear beginning and end which lasted for at least one minute.

Learning episodes were identified by the 'theme' of the episode, for example the theme was 'space-ship', the target child began by building the space ship from lego, then spoke to the adult about the space ship, then made changes to the design and added new parts before 'flying' the space-ship around the classroom, stopping briefly to make more modifications, the episode then ended when the target child put the space-ship down and went to another activity during which space-ships were not spoken of or seen in the target child's activity and the child did not return to the space-ship.

The settings were chosen in order to try to amplify the findings found by the quantitative analysis of the whole TCOs in the differences between different types of settings, hence the 3 most effective (excellent) settings, the 2 Reception classes and 2 other settings were randomly chosen.

Information collected for episode analysis of TCO

The information from the TCO as well as further information was used for the episode analysis of the episodes. This further information is described below:

Overall qualitative judgements were made on the main social grouping, whether an adult was present and what level of training they had, whether the target child was interacting with the social group, which Foundation Stage area was experienced, and whether the target child was mainly active or passive during the episode.

The length of the episode was also recorded, this is different to the length of runs which were described by the TCO data as this is the length of the episode which may contain several child codes (see above for the description of an episode), while the TCO data is based upon a run of the same child codes.

Inside / Outside

Initiation and choice of activity
Categories include: *Adult initiated throughout*, *adult initiated but child elaborated or extended*, *child initiated throughout*, and *child initiated but adult elaborated or extended*.

The level of cognitive challenge which was experienced by the target child during the learning episode.
Categories include: *High challenge, Low-medium challenge, No challenge, and insufficient evidence for challenge judgement.*

Critical contribution of adult
This was made on the adult's most critical contribution to the child, it may have been the shortest but it made the most impact on the child.
Categories include: *Prior framing only, Initiates but no more, Manages, Instructs, Plays, Supports, Extends*.

Critical points during the episode
When a critical turning point of the episode occurred for the target child this category tried to capture the reason for what provided the critical moment.
Categories include: *Extension* provided by the adult*, Materials* and resources*, Re-direction* or rescue made most commonly by an adult*.*

Reason for the end of the episode
Categories include: *Satisfactory close*, the episode *'fizzled out'*, *enforced close* eg due to timetable restrictions or asked to start another activity, *observation time elapsed although the activity continued*.

Appendix 7 Cognitive challenge

HIGH COGNITIVE CHALLENGE (COMPLEX)	ORIDINARY COGNITIVE CHALLENGE
Child activity is: Novel, creative, imaginative, productive	Child activity is: Familiar, routine, stereotyped, repetitive, unproductive
Cognitively complex, involving the combination of several elements, materials, actions, or ideas	Cognitive unsophisticated, not involving the combining of elements
Carried out in a systematic, planned and purposeful manner	Performed in an unsystematic random manner with no observable planning or purposefulness
Structured and goal-directed –working towards some aim, whether the result is tangible end-product or an invisible goal	Not directed towards a new, challenging goal, 'aimless' and without structure
Conducted with care and mental effort; the child devotes a great deal of attention is deeply engrossed – takes pains	Conducted with ease, little mental effort, and not much care; the child is not deeply engrossed, his/her attention may not be entirely on that task
Learning a new skill, trying to improve an established one, or trying novel combinations of already familiar skills	Repeating a familiar, well-established pattern without seeking to improve upon it nor to add any new component or combination

Sylva, K., Roy, C., Painter, M. (1980) *Childwatching at Playgroup and Nursery School.* London:Oxford Preschool Research Project p60

Appendix 8 – Examples from the Target Child Observation (TCO) of children learning from child initiated play

Time by ½ min	Narrative of Events	Target child's experienced curriculum	Social Grouping	Interacting ?	Target Child Activity	Pedagogical Interaction
0.30	Target Child (TC) picks up bucket of water with string on handle says going to change side of the bucket.	Knowledge	Small Group (3-8 children)	Yes	Large Scale Construction (LSC)	Absent
1.00	TC climbs up frame with string and pulls string, thus lifting bucket from ground.	↓	↓	No	LSC / Problem Solving	↓
1.30	TC pulls string around a corner lifting bucket higher. TC holds it high.	↓	↓	No	↓	↓
2.00	TC drops string and bucket falls. TC moves position on frame.	↓	↓	No	↓	↓
2.30	TC puts string around a bar, so that the string does not jar over the floor of the frame. TC then lifts bucket again by pulling string.	↓	Small Group with staff level (L) 2-4	No	↓	Staff present and available
3.00	Child (C) using bucket and water to wash sides of frame. TC lowering & lifting bucket.	↓	Small Group	No	LSC	Absent
3.30	TC moves to standing on edge of frame TC pulls on string from new position on side of frame.	↓	↓	No	LSC / Problem Solving	↓
4.00	TC moves away from edge to a better position on frame.	↓	↓	No	↓	↓
4.30	TC→ staff L 2-4 about his name and continues lifting bucket.	↓	Small Group with L2-4	Yes	LSC	Social Conversation / Questions
5.00	C →TC to lift bucket higher. TC watches as bucket lifts and lowers. L2-4→TC that C can't reach if it is too high.	↓	↓	Yes	↓	Task Management
5.30	L2-4→TC to look and see if C can reach bucket. TC puts bucket to a better position for C to reach.	↓	↓	Yes	LSC / Problem Solving	Extending/ Encouraging
6.00	TC→C tell me when to stop lifting. TC lifting bucket. Stops when C says	↓	Small Group	Yes	↓	Absent

6.30	**TC→C how they can stop it if someone tries to tip bucket over.**	**Knowledge**	**Pair**	**Yes**	**LSC / Problem solving**	**Absent**
7.00	**TC trying to secure string on bar with a knot. TC looks at knot.**	**↓**	**↓**	**No**	**↓**	**↓**
7.30	**TC looks at C washing frame and lifts bucket.**	**↓**	**↓**	**No**	**↓**	**↓**
8.00	**TC watches C wash and lowers again.**	**↓**	**↓**	**No**	**LSC**	**↓**
8.30	**TC stands and watches C go down fireman pole.**	**↓**	**↓**	**No**	**↓**	**↓**
9.00	**TC lifts bucket and secures to height C can reach.**	**↓**	**↓**	**Yes**	**↓**	**↓**
9.30	**TC watches C and asks if wants bucket higher or lower. Then moves bucket higher in response to C.**	**↓**	**↓**	**Yes**	**↓**	**↓**
10.00	**TC moving bucket and string.**	**↓**	**Alone**	**No**	**↓**	**↓**
10.30	**TC swinging bucket to and fro using string.**	**↓**	**↓**	**No**	**↓**	**↓**
11.00	**TC lifting bucket and drops too quickly and water sloshes. TC lifts bucket up to himself on platform.**	**↓**	**↓**	**No**	**↓**	**↓**
11.30	**TC starts washing frame with scrubbing brush.**	**↓**	**↓**	**No**	**Examination& Exploration**	**↓**
12.00	**C joins TC washing using brush.**	**↓**	**Pair**	**No**	**↓**	**↓**
12.30	**TC washing wood slats with brush. TC looking at wood as he wets it**	**↓**	**Alone**	**No**	**↓**	**↓**
13.00	**TC uses both hands on the brush scrubbing the wood slats of the frame.**	**↓**	**↓**	**No**	**↓**	**↓**
13.30	**TC uses both hands on the brush scrubbing the wood slats of the frame.**	**↓**	**↓**	**No**	**↓**	**↓**
14.00	**TC washing wood. Stands up goes down fireman's pole. TC goes to sand. L2-4→TC if want to join them.**	**↓**	**Small Group with L2-4**	**No**	**Cruise**	**Task management**
14.30	**TC takes off sandals puts shoes in basket and goes into sand pit.**	**PSE**	**↓**	**No**	**Manipulation**	**↓**
15.00	**TC stands in pool of wet sand. Walks about in it.**	**Knowledge**	**↓**	**No**	**Manipulation / Examination & Exploration**	**Questioning**

15.30	**TC takes pan and goes to fill it with water using hosepipe. Puts hosepipe on pan and waits. Nothing happens.**	**Knowledge**	**Alone**	**No**	**Manipulation/ Problem solving**	**Absent**
16.00	**TC tries turning tap and watches water. Returns to sand pit.**	**↓**	**↓**	**No**	**↓**	**↓**
16.30	**TC→L2-4 about wanting to get water. L2-4→TC don't need any water. TC picks up a bucket.**	**↓**	**Small Group with L2-4**	**Yes**	**Manipulation**	**Task management**
17.00	**Goes to hosepipe and puts hose into it. Turns tap.**	**↓**	**Alone**	**No**	**↓**	**Absent**
17.30	**TC fills with water, turns off tap and returns to pit.**	**↓**	**↓**	**No**	**↓**	**↓**
18.00	**TC puts water into pool. TC stands in pool.**	**↓**	**Small Group with L2-4**	**No**	**↓**	**Staff present and available**
18.30	**TC standing in pool. Takes another bucket to the tap.**	**↓**	**↓**	**No**	**↓**	**↓**
19.00	**TC fills bucket with water. TC talks to C who wants him to go to frame. TC refuses.**	**Knowledge / PSE**	**Small Group**	**Yes**	**Manipulation**	**Absent**
19.30	**TC takes water and goes to sand pit and puts it into pool. TC picks up funnel.**	**Knowledge**	**Small Group with L2-4**	**No**	**↓**	**Staff present and available**
20.00	**TC goes to tap and bucket and funnel. L2-4→TC to turn it off, not to bring anymore water.**	**↓**	**↓**	**No**	**↓**	**Reprimand/ Manage**

This observation took place in a Combined Centre (which has Early Excellence Centre status). The target child was a boy who was 4 years 7 months at the time of observation. He had been identified by his teacher as being a highly capable learner.

This is a child-initiated activity which has been setup by the staff. The target child is in the outside area, he is with three other child by the fixed climbing frame in the garden. There is a bucket of soapy water with several sponges in it beside the climbing frame. The bucket has a long piece of string attached to the handle of the bucket. The two other children in the small group are using the sponges to wash the sides of the climbing frame which is quite dirty.

The target child is experimenting with how to lift the bucket using the long piece of string, he finds this very challenging and engaging. A member of staff approaches the target child and talks to him about what he is doing, and encourages him to consider the other children who are using the bucket.

Time by ½ minute	Narrative of Events	Target child's experienced curriculum	Social Grouping	Interacting ?	Target Child Activity	Pedagogical Interaction
0.30	Target Child (TC) building with lego. TC trying to pull up pieces	Knowledge / Physical	Small group with Level 5 practitioner (L5)	No	Small scale construction (SSC)	Staff present and available
1.00	TC trying to pull up pieces of lego from base board.	Physical	↓	No	↓	↓
1.30	L5→TC do you want to do a drawing? TC ignores.	↓	↓	No	↓	Task management
2.00	TC pulling up pieces. L5→TC 'if you want to here's the paper, remember it's all the things you can do after a year in reception.'	↓	↓	No	↓	Task management/ Task explanation
2.30	TC pulling up lego	↓	↓	No	↓	Staff present and available
3.00	TC pulling up pieces from lego base.	↓	↓	No	↓	↓
3.30		↓	Small group	No	↓	Absent
4.00	TC putting pieces onto lego	Knowledge / Physical	↓	Yes	↓	↓
4.30	A→TC asks to put name on frog. TC putting more lego on.	↓	Small group with Adult (A)	Yes	↓	Task management
5.00	TC filling gaps and lego.	↓	Small group	No	↓	Absent
5.30		↓	↓	No	↓	↓
6.00	TC filling gaps on base piece with lego	↓	↓	No	↓	↓
6.30		↓	↓	No	↓	↓
7.00		↓	Small group with L5	No	↓	Staff present and available
7.30		↓	Small group	No	↓	Absent
8.00		Knowledge / Physical	Small group	No	SSC	Absent

8.30	TC →C 'I need that piece' C hands it over.	↓	↓	Yes	↓	↓
9.00	TC listens and smiles at C about pieces	↓	↓	Yes	↓	↓
9.30	TC intent on filling gaps with lego pieces.	↓	↓	No	↓	↓
10.00		↓	↓	No	↓	↓
10.30		↓	↓	No	↓	↓
11.00		↓	↓	No	↓	↓
11.30		↓	↓	No	↓	↓
12.00		↓	↓	No	↓	↓
12.30	C requests a piece of lego which TC finds and gives to C.	↓	Small group with L5	Yes	↓	Staff present and available
13.00	TC↔A about construction which TC tells A is a garden.	Knowledge / Literacy	Small group with A	Yes	↓	Questioning
13.30	TC↔A about garden	↓	↓	Yes	↓	Encouragement/ Discussion
14.00	TC↔A that you can buy trees and flowers at the garden. L5→class 'time to tidy up'.	↓	↓	Yes	↓	Discussion/ Task management
14.30	TC→A 'do you want to keep? How will you know it's yours?' TC gets paper to write name.	↓	↓	Yes	↓	Questioning / Extending
15.00	TC writing name label for model.	↓	Small group	No	SSC / Writing- word	Absent
15.30	TC gets scissors to cut out name label.	Knowledge / Physical	↓	No	SSC /Art- Cut and paste	↓
16.00		↓	↓	No	↓	↓
16.30	TC takes model to L5 who praises TC. A→TC where to display model.	Knowledge / PSE	Small group with L5	Yes	SSC	Encouragement/ Task management
17.00	L5→TC put over there do on Monday. TC goes to toilet.	No clear curricular intention	Alone with L5	Yes	Domestic activity	Task management

17.30	**TC in toilet.**	↓	**Alone**	**No**	↓	**Absent**
18.00	**TC in toilet then returns to the classroom**	↓	↓	**No**	↓	↓
18.30	**TC shows A arm which hurts. A→TC put cold water on it.**	↓	**Child pair with A**	**Yes**	**Social talk**	**Care**
19.00	**TC goes to toilet to wash her arm. TC goes to classroom collects and hugs her soft toy.**	↓	↓	**Yes**	↓	**Encouragement/ Care**
19.30	**TC puts toy in drawer (TC's own to go home).**	↓	**Alone**	**No**	**Domestic activity**	**Absent**
20.00	**TC listens to C saying rhyme**	↓	**Small group with L5**	**Yes**	**Social talk**	**Staff present and available**

This example was taken from a Reception class. The target child is a girl who is 5 years 8 months at the time of observation. She was identified by the teacher as a highly capable learner.

This activity was initiated by the child, the level 5 teacher approached and asked if she wanted to do the work about what she had achieved in reception class, but when she saw that the target child was engrossed in her current activity she allowed her to continue. The target child was totally engrossed in what she was doing, and the complexity of her thinking emerged when she spoke to the adult about what she had made.

Item	Inadequate		Minimal		Good		Excellent
	1	2	3	4	5	6	7

Appendix 9: *ICT Rating sub-scale*

Information handling and Communication Skills

	1.1 There is no or little use made of ICT in the setting.[1]	3.1 ICT is applied by staff to enhance the print and number environment throughout the setting (e.g. printouts used in emergent literacy/numeracy/labels)	5.1 Staff use the computer during story telling and/or other group activities (e.g. multimedia, talking books, programmable toys, encyclopaedia).	7.1 Children are encouraged to use ICT to share their ideas and discoveries with peers (e.g. displaying their painting in a display or the centre's web page).
	1.2 Children are not encouraged to operate the ICT themselves (e.g. any computer, video, television, cassette, telephone etc) that is available.[2]	3.2 Children are encouraged to use only the supplied and pre-installed software on the computer (e.g. drill and practice literacy and numeracy programmes).	5.2 Children are encouraged to choose their own applications during free play. 5.3. The Programmes available include open-ended problem solving, adventure games and draw/paint software.[3]	7.2 The children are encouraged to provide initial instruction and to help each other in using new programmes and applications.
			5.4 In applying the ICT the children make their own choices to produce different outcomes.	7.3 Children are encouraged to use generic software[4] and other applications for their own purposes (e.g. using a paint programme to make a birthday card for a parent).

[1] Computers and programmable toys are not available, mostly ignored or inoperative
[2] e.g. switching equipment on and off
[3] Applications supporting/demanding creativity
[4] Generic software is software designed for a multiplicity of uses, e.g. word-processing, graphics, database

Item	Inadequate		Minimal		Good		Excellent
	1	2	3	4	5	6	7
Access and control of ICT tools							
1.1 Very little pretend or real technology is available for the children's use in the setting[5].			3.1 The children occasionally select and load their own computer programmes under adult supervision.		5.1 The children routinely select and load their own computer software.		7.1 The children are encouraged and supported in information retrieval (e.g. in accessing a CD-Rom encyclopaedia[6] to help them answer a question).
1.2 The children are rarely or are never given the opportunity to operate ICT (e.g. TV, cassette, video, computers etc)			3.2 The children have the opportunity to play with computer programmes and programmable toys (e.g. Pixie).		5.2 The children are encouraged to operate ICTs and to appreciate that signals and instructions are required to control them.		7.2 The children are encouraged in their play to control a wide range of real and/or pretend technologies (e.g. alarms, washing machines, video recorders etc).
			3.3 Children have access to, and operate for themselves, cassette recorders, video, computers.		5.3 Computer software is employed to support learning in a range of subject areas (e.g. music and science as well as literacy and numeracy).		7.3 Computer software is available to support learning in all subject areas across the curriculum.

[5] i.e. restricted to telephones, cash registers etc – no programmable toy and no real or pretend computer
[6] Or other CD-Rom or internet (non-fiction) information source

Item	Inadequate		Minimal		Good		Excellent
	1	2	3	4	5	6	7

Learning about the uses of ICT

1.1 No references are made to the ICT in the children's homes, the early childhood setting or local environment.	3.1 The staff sometimes draw children's attention to the ICT in the setting and in their homes[7].	5.1 The children's attention is specifically drawn to the ICT in their local environment (e.g. through reading stories about technology, visits to supermarket checkouts etc.).	7.1 The children are encouraged to provide narrative accounts[8] of their own and others interactions with ICT (e.g. of scanning products through a supermarket checkout, using a cash point, ICT at home).
1.2 The children never see the staff using ICT for their own purposes.	3.2 The children sometimes see staff using ICT (e.g. a school secretary using a word processor)	5.2 The children routinely see staff using ICT in pursuit of the educational aims of the setting e.g. searching for information on the www, programming a video recorder, making labels for display, using a mobile telephone).	7.2 The staff provide instruction in new applications as a direct response to a child or to a group of children's interests or expressed needs.
	3.3 Pretend or real ICT resources are provided for the children to use in socio-dramatic play environments (e.g. home corner).	5.3 Play with pretend or real ICT is encouraged and often included in socio-dramatic play.	7.3 ICT is integrated into a range of socio-dramatic play environments (e.g. in a 'shop' or an 'office' play environment).

[7] If not directly observed, this item must be included in the settings curriculum scheme or statement
[8] e.g. telling each other about their own or others use of ICT in 'sharing time'