

***Better Interactions,***

***Better Learning:***

developing the role of the teacher to optimise  
classroom interactions for learning

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<b>Table of Contents</b>	<b>page</b>
Table of Contents	i
List of tables	iv
List of figures	v
Declaration	vi
Acknowledgements	vii
Abstract	viii
<b>Chapter 1 Introduction</b>	<b>1</b>
1.1 The aims of this study	2
<b>Chapter 2 A review of literature: Developing effective interactive processes in the classroom</b>	<b>5</b>
2.1 A developmental and epistemological perspective	6
2.1.1 Interaction as functional in development	6
2.1.2 Interaction as an integral factor in learning	8
2.2 Designing teaching for effective learning	10
2.2.1 The value of the interactive learning environment	10
2.2.3 The value of interactions between children	14
2.3 The teacher's role in supporting effective interactions	15
2.3.1 Sharing the enterprise of learning	16
2.3.2 Supporting interactions between children	20
2.4 The context for this study	23
2.4.1 Children labelled as SEBD in residential care	24
2.4.2 Developing teacher skills through self-reflection	25

<b>Chapter 3</b>	<b>Methodology</b>	<b>29</b>
3.1	Research questions	29
3.2	Research paradigm	30
3.3	The context of intervention	30
	3.3.1 The school	30
	3.3.2 Participants	31
3.4	The research design and intervention process	31
3.5	Observational data coding and analysis	36
3.6	Attitudinal data gathering and coding	39
<b>Chapter 4</b>	<b>Results</b>	<b>40</b>
4.1	Analysis A: The two-way interaction of ideas	40
	4.1.1 The proportion of teacher-talk to child-talk	41
	4.1.2 Teacher-talk based on teacher's or children's ideas	42
4.2	Analysis B: Supporting the co-operation between children	43
	4.2.1 The use of linking statements	43
	4.2.2 Teacher-talk referents	45
4.3	Analysis C: Exploring the nature of child-talk	46
	4.3.1 Children extending children's ideas	46
	4.3.2 Child-child interaction	48
	4.3.3 Negative and off-task child-talk	50
4.4	The developmental process of change in talk-types	51
4.5	Individual case studies	52
4.6	Summary of Results	63
4.7	Developing ideas about the role of interactions	64
4.8	Results of personal evaluations	65

<b>Chapter 5</b>	<b>Discussion</b>	<b>66</b>
5.1	Limitations of the study	66
5.1.1	Conclusions within the constructivist paradigm	66
5.1.2	Limitations in the scope of the data analysed	68
5.1.3	Operational issues in working with video	70
5.2	Re-addressing the research questions in light of results	72
5.3	Wider implications for Education	77
5.3.1	The inclusion of children within the classroom	77
5.3.2	The interaction between teacher, child and curriculum	79
5.4	Implications for the role of Educational Psychology	80
5.4.1	Constructivist framework for approaches to work	81
5.4.2	Shared learning within and between organisations	84
5.5	Implications for future research	85
<b>Chapter 6</b>	<b>Summary and Conclusions</b>	<b>88</b>
References		91
Appendix 1:	Diagram of the intervention and research design	101
Appendix 2a:	Training booklet for Training session 1	102
Appendix 2b:	Evaluation of training session 1	111
Appendix 3a:	Activity booklet introduced in training session 2	112
Appendix 3b:	Prompt card introduced in training session 2	120
Appendix 4a:	Questionnaire regarding interactions with children	121
Appendix 4b:	Final evaluation form discussed at plenary session	122
Appendix 5:	Actual talk-times of children and teachers	123

**List of tables**

Table 3.1:	Coding system for teacher-child and child-child interactions.	37
Table 4.1:	The developmental process of change in talk-types.	51
Table 4.2:	The summary of results.	63
Table 4.3:	Perceptions of effective interactions before and after intervention.	64

### List of figures

Figure 4.1:	Talk-time of teachers and children before and after intervention.	41
Figure 4.2:	The nature of teacher-talk before and after intervention.	42
Figure 4.3:	Bar charts showing use of linking statements before and after intervention.	44
Figure 4.4:	Bar charts showing teacher-talk referents before and after intervention.	45
Figure 4.5:	The nature of child-talk before and after intervention.	46
Figure 4.6:	Child-talk with teachers and with children before and after intervention.	48
Figure 4.7:	Line graphs showing the relationship between children extending children's ideas and the use of linking statements.	49
Figure 4.8:	Pie charts showing nature of group 1 interactions before and after intervention.	53
Figure 4.9:	Pie charts showing nature of group 2 interactions before and after intervention.	55
Figure 4.10:	Pie charts showing nature of group 3 interactions before and after intervention.	57
Figure 4.11:	Pie charts showing nature of group 4 interactions before and after intervention.	59
Figure 4.12:	Pie charts showing nature of group 5 interactions before and after intervention.	61

**Declaration**

This thesis has been composed entirely by the author, Kirsty A. Brown, for the MSc in Educational Psychology, 2002-2004, at the University of Dundee, Scotland.

I declare that the thesis is entirely my own work, all references cited have been consulted and the thesis has not been submitted previously for a higher degree.

The thesis comprises 18,644 words.

Kirsty Brown

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**Abstract**

Current learning theory suggests that the interactive processes children engage in within the classroom do not merely influence children's thinking but form the actual construction of their thoughts. Learning is presented as a social, distributed process where participants interact and build on each others contributions. The skills of the teacher in effectively establishing and managing the social learning process may be an essential component in children's educational experiences and outcomes. This thesis presents an intervention aimed at identifying and extending the skills of 5 primary teachers in developing an interactive learning environment. Firstly, teachers aimed to increase the level of two-way interaction within the classroom between the teacher and children. Secondly, teachers aimed to support the process of interaction between children. Teachers engaged in video analysis of their classroom interactions, identifying and exploring examples of target behaviours. Comparison of observations before and after intervention show significant changes in the nature of talk by teachers, with a greater focus on children's inputs, and an increase in the use of linking statements made between children's ideas. Children engaged more in the learning process, extending their ideas with the teacher and children and with a considerable decrease in negative/off-task interactions. It is proposed that the interactive processes of the classroom relate directly to the inclusion of children and should be considered when planning to meet educational needs. Issues relating to balancing interactive learning processes with curricular demands are also addressed. Finally, it is proposed that the processes of two-way interaction and supporting co-operation may be processes common to any effective learning system and that Educational Psychology services may play a key role in developing these processes within the education system.

## Chapter 1

### Introduction

*“The acquisition of knowledge is not only a matter of formal and theoretical instruction. The content of education should be geared to high standards and the needs of individuals with a view to enabling them to participate fully in development. Teaching should be related to pupils’ own experience and to practical concerns in order to motivate them better.”*

Salamanca statement (1994; p.22)

Bruner (1966) refers to education as the *‘sole agent of evolution’* (p.26) where the cultural tools of society are disseminated to the newest members. He proposes that the formal education system is an extension of the more subtle learning that occurs through parent and child interaction, where the primitive tools of sharing attention, language and co-operation are developed. However, Bruner argues that the education system has been constructed without reference to these interactive processes, with a focus on the products of schooling, rather than the processes of learning that make schooling an effective learning environment (Bruner, 1966, Trevarthen, 2002).

Current literature focuses on the interactive nature of learning, implicitly suggesting the need for developments in teaching practice. Trevarthen (2002) argues that people are born, not just with motives to learn from other

people but in fact to learn in companionship with them. He suggests that the most significant factor in learning is in fact the nature and development of the interaction through which learning takes place. Ultimately, thinking is presented as a social process, where knowledge and understanding are constructed between people, and where language functions to support the co-construction of knowledge (Rogoff, 1990; Bruner, 1996; Mercer, 2000).

Research demonstrates that the conditions of effective learning through interaction do not necessarily occur simply as a result of shared tasks, but rather through the development of effective interactional styles (Mercer, 2000; Rojas-Drummond & Mercer, 2003). Matusov (2001) proposes that for effective learning to occur, teachers must focus on the intersubjective processes within the classroom, through which knowledge and understanding are constructed co-operatively. Through this teachers must aim to involve children in thinking and learning, through establishing and supporting a two-way interaction of ideas where meaning may be constructed socially. Interaction, co-operation and dialogue are placed at the very centre of the learning process, with the teacher in a pivotal role to optimally co-ordinate the learning experience of children.

### **1.1 The aims of this study**

This study documents the development of teachers in attempting to actively engage children in learning through interaction. It argues that teachers have a key role in supporting the interactive processes of the classroom to involve children actively in learning. The study involves teachers and children at a residential school for children with social, emotional and behavioural difficulties. Through training embedded within the school context and using

video to reflect on practice, the role of the teacher in developing an interactive learning environment is explored and extended.

The study aims to explore what teachers currently do and to facilitate the development of skills in:

- Creating the two-way interaction of ideas in the classroom by involving children in the development of ideas.
- Supporting the interaction and co-operation between children in discussion activities.

By developing the interactional style of the teacher, it is anticipated that the learning experience of children will also develop. Interactions with and between children are analysed before and after the intervention process to consider levels of engagement in the interactive learning process, including levels of negative and off-task interactions and to what extent children actively extend their own and other children's ideas within classroom interactions.

**Chapter 2** of this report presents a review of literature firstly exploring the developmental and epistemological perspectives of interactive learning approaches and secondly the educational research into interactive approaches and the role of the teacher in establishing and maintaining such an environment. **Chapter 3** details the methodology employed in the study, outlining the interactive needs analysis and design process. **Chapter 4** presents the results from analysis of classroom interactions of teachers and children, before and after intervention. Differences in interactional styles are explored as a group of teachers and children, and through individual case

studies. Changes in perceptions of interactions are also considered. In **Chapter 5**, limitations of the study are considered to ensure results are addressed appropriately. Following this results are explored in relation to both the research questions and in relation to wider implications for education and educational psychology. Implications for future research are also considered. Finally, **Chapter 6** presents the summary and conclusions of the study.

## **Chapter 2**

### **A review of literature:**

#### **Developing effective interactive processes in the classroom**

The process of learning that occurs through classroom interactions is explored through literature referring to the social context of development (eg. Rogoff, 1990; Bruner, 1996), the social context of human consciousness (Trevarthen, 2002), and the collective social processes that lead to individual thoughts (Vygotsky, 1978). A developmental and epistemological perspective is explored first to consider the principles and research underlying interactive learning theory. Following this, the benefits of interactive and co-operative learning environments are considered. Finally, the role of the teacher in effectively creating such a learning environment through creating the shared enterprise of learning within the classroom, and an interactive community of enquiry between children, is considered.

The literature included in the review was identified through internet search engines, Athens and Ingenta, using combinations of key words including 'classroom interactions' and 'classroom co-operation'. Co-operative and interactive learning environments are used in the literature without explicit differentiation. It is assumed that both refer to the shared construction of ideas between the teacher and children.

## 2.1 A developmental and epistemological perspective

*"In devising instruction for the young, one would be ill advised indeed to ignore what is known about growth, its constraints and opportunities" (Bruner, 1966; p.1)*

This section considers the function and significance of interaction and co-operation in early development and learning, and considers implications for the development of a theory of instruction and learning.

### 2.1.1 Interaction as functional in development

Bruner (1966) proposed that much of a child's mental growth occurs through interaction, from the 'outside in' where techniques from that culture are transferred to the child. The child remains an active participant in the interaction. Evidence suggests that early interactive experiences may serve a developmental function for the young child. Trevarthen (2002) argues that attunement between a mother and baby, and the development of co-operative understanding is crucial to development, as meaning is created through interaction with another person. Trevarthen (1978) monitored interactions between mothers and babies and found that the mother and baby engage in co-ordinated patterns of dialogic exchange, each making initiatives in turn and responding to the initiatives of the other. An interaction based on emotional referencing develops where mothers and babies respond to each others states of arousal (Trevarthen, 1979). This early subjective awareness has become known as 'primary intersubjectivity'.

The interaction and intersubjectivity between mother and baby evolves to allow co-operation with another object. Hubley & Trevarthen (1979) identified the emergence of co-operative awareness around one year old, and identified this advanced development as 'secondary intersubjectivity'. It is proposed that the development of co-operative awareness allows for the development of cultural learning and language (Trevarthen & Aitken, 2001). Rogoff (1990) suggests that through the process of interaction a shared meaning is created through which cultural tools may be learned. As development proceeds through continual dialogue and co-operation, Bruner (1966) argues that the child develops more sophisticated systems of organising and using the information about the world.

It is proposed that a lack of early interactional experiences and joint activity between a mother and baby may have detrimental effects on a child's development. Trevarthen & Aitken (2001) propose that lower levels of joint attention between a mother and child, can negatively affect the child's language development. They suggest that the turn taking interactive behaviour between the mother and child serves a developmental function in language development. Smith & Fluck (1999) introduced strategies based on the principles of joint attention to nursery staff working with children with delayed communication skills. Improvements in communication skills were documented beyond other groups of children receiving language based strategies and a control group of children receiving no input. Low levels of mother-child joint activity have also been associated with behaviour problems in school. Galboda-Liyanage, Prince & Scott (2003) found high correlations between reported low-levels of mother-child joint activity and behaviour problems in pre-school, after controlling for educational, social and familial

factors. Conversely, positive parenting and interactions based on joint activity have been shown to lead to reduced behaviour problems in families (Pettit, Bates & Dodge, 1997).

Causal links between early interaction and child development can not be concluded on the basis of the evidence presented. Low joint activity may indeed be the result of delayed language or behaviour problems. However, developmental patterns are apparent where child development may proceed optimally under conditions that promote joint activity. Trevarthen (2002) argues that the principles of companionship, intersubjectivity and interaction should be at the centre of effective teaching practices and apply throughout every child's education and life experience. Extending Trevarthen's work into the classroom, Kaye, Forsyth & Simpson (2000) propose that,

*"Effective teacher interaction...should ensure the shared negotiation of learning with the class through attuned turn-taking and emotional referencing. In this way pupils are enabled to learn from others and to learn self-control."* (p.70)

### **2.1.2 Interaction as an integral factor in learning**

Piaget (1932) perceived development as a staged process with progress achieved through the reorganisation of perceptions, through interactions with the environment. Piaget concluded that young children were unable to take account of another's point of view and such egocentrism was a barrier to the development of more mature operational thinking. Children need to experience socio-cognitive conflict through exposure to a different perception, in order to progress their thinking. Piaget stands in contrast to

Trevarthen (1978; 1979; 2002) who proposes that the basis of development proceeds through the intersubjective awareness of another person. Through replication of Piaget's experiments with children, Bruner (1966) and Donaldson (1987) discovered children's responses to reflect a more interactive quality relating to the child and the tester. Such findings suggest that learning does not proceed through the internalised reorganisation of the autonomous thinker, initiated through conflict, rather, through an intersubjective and interactive process of joint construction (Light & Littleton, 2000).

Bruner (1966) demonstrated that children's responses were a function of the strategies they used in constructing information about the world. Bruner states that children's responses and error patterns are generally consistent according to their perception of the task. He proposes that the child answers a different question to the one presented relating to their own representation of the world. The role of the adult is to find out how the child represents the world and what question they are answering. Donaldson (1987) found that children could take another person's point of view, providing tasks were presented in meaningful ways. She proposed that a child failing in such a task reflects the adult's failure to understand the child and consider the task from the child's point of view. Piaget did not consider the interaction between the child and adult, the nature of language used, the understanding of language by child and adult, and the assumptions of the child regarding the adult's intention.

The work of Bruner and Donaldson present the child's interaction with the adult and the context as integral factors in a child's learning experience. It

follows that for effective learning to proceed, a teacher must focus on meaning from the child's point of view. This epistemological view requires the teacher to consider how knowledge and information is constructed, organised and used by a children to find creative ways to progress their thinking.

## **2.2 Designing teaching for effective learning**

Vygotsky (1978) suggests that the design, organisation and nature of the social processes within a classroom may be not merely influential on the child's thinking, but form the essential construction of their thoughts. The interactional style employed by the teacher and the design of interactive learning activities may drive the processes of learning within the classroom that inform the very nature of learning (Mercer, 2000). This section explores the difficulties with direct instruction approaches and the benefits of interactive learning environments, particularly through co-operative activity between children.

### **2.2.1 The value of the interactive learning environment**

Trevarthen (2002) suggests the teaching profession is established on the assumption that children's ideas are constructed through experience and instruction, rather than through the natural desire to interact. Consequently, teaching is valued according to the successful transference of knowledge and experience. Knowledge is transmitted, rather than co-constructed through a shared interactive process (Corrie, 2002). This is supported empirically through a recent classroom based study in mainstream schools by Hargreaves et al. (2003), which found that teachers spent over half the time

engaged in the one-way transmission of ideas, giving information and telling children what to do.

However, educational benefits are more readily derived from an interactive learning experience. Stevens & Slavin (1995) conducted a longitudinal study, of children with learning difficulties, attending mainstream schools with different operational models. Children attending schools operating with a co-operative, interactive learning model performed significantly better across subjects, and were considered more socially accepted, than children attending schools operating with traditional models of learning. Where learning occurs through the social co-construction of meaning, learning may be more accessible to the range of children in the class. The following studies explore the nature of the interactive learning compared to the direct instruction approach and the nature of educational gains for children.

Schacher (2003) conducted an overview of eight studies comparing the effectiveness of whole class instruction to co-operative learning with specific reference to high and low achieving children. He concluded that whole class instruction functions to perpetuate the learning gap and achievements between children. In the class based on whole class instruction, children spoke less and high-achieving children took twice as many turns as low-achieving children. Children from co-operative learning classes were found to speak more, and there were equal numbers of turns taken by high and low achieving children, suggesting an equal engagement in the interactive learning process. While many studies demonstrate the short term advantages of co-operative learning, Schacher documented long term benefits for educational outcomes. Schacher found that after seven months

of implementation, children from the co-operative learning class wrote more words in an examination than the other children. Additionally, the low-achieving children wrote as many as, or more words than, the high-achieving children in the class. With regards to academic achievement, in the co-operative learning class, the low-achieving children significantly improved across all subjects. The significance of these measurable gains, with reference to the Scottish Executive's drive to improve attainment levels (Scottish Executive, 2001b) cannot be understated.

Waxman & Huang (1997) studied the nature of classroom instruction and the learning environment in schools for African-American children. Schools were classified as effective or ineffective, based on assessment scores. While children from both schools were considered to be on-task for most of the observations, Waxman & Huang concluded that the nature of learning experiences across effective and ineffective schools were qualitatively different. Children in the schools considered *effective* spent almost twice as much time interacting with the teacher and more time working on written assignments. Consistent with this first finding, Wang, Haertel & Walberg (1994) identified the amount and quality of teacher-pupil interactions based on the academic content of the class, to be the most important variables within education that facilitate and promote outcomes for children. The interaction with the teacher may be crucial in supporting the social processes of learning.

Children from the schools considered *ineffective* were taught as a whole class for more of the time, with lecture-based lessons followed by knowledge-based questions. Schacher (2003) suggests that by using whole class

instruction, teachers deny themselves insight into how meaning is constructed and represented by children to inform their teaching approach. Thomson (1999) proposes that children often don't have the cognitive strategies required to meet the demands of tasks set by teachers, referring particularly to children with learning difficulties and off-task behaviour. To design learning activities appropriately, the teacher must work from feedback from the learners. In the ineffective schools, children spent more time interacting with others and less time with the teacher and children's active involvement in their learning and the intellectual demand on them was considered lower. The level and nature of interaction within the design of the learning experience, it seems, may have significant implications for children's engagement in learning and the educational outcomes achieved.

The literature suggests that the nature of the teaching environment directly affects the learning experience of children and the nature of learning that occurs. There are many reasons, however from a teacher's perspective, why whole class instruction methods may persist. By taking more of a facilitative and interactive role, Marlowe & Page (1998) suggest that the teacher's control over learning outcomes may be substantially reduced. Children learn more independently, constructing knowledge and understanding according to their own and others previously learned knowledge or skills, rather than according to the teacher's intention. Helping children create links between learning may be difficult as the teacher has to individualise responses and consider what is important for whom (Meadows, 1998). Additionally, Corrie (2002) suggests that the teacher may have less control over discipline as children interact together through talking and moving and follow a less directed path through learning. Such statements suggest teachers may feel

constrained by curricular and behavioural issues. The design of the education system may be crucial in the successful development of teaching practice in line with learning theory.

### **2.2.2 The value of interactions between children**

Waxman & Huang's research (1997) detailed that the ineffective schools showed more interactions between children. This finding is in contrast to a myriad of research demonstrating the benefits of children working collaboratively with peers, from engagement to task, time on task, thinking skills and attainment (eg. Vygotsky, 1978; Yarrow & Topping, 2001; Azmitia, 1998; Kumpulainen, 2001).

Evidence suggests the collective group of children in the class may be arranged as an interactive resource to enhance learning and behaviour. For example, Azmitia (1998) highlighted the value of shared thinking. Observing five year olds working in pairs Azmitia deduced that working with a partner increases time spent on task, prevents children from giving up when faced with difficulty, adds enjoyment to the task and increases the available work strategies as resources are pooled. Greenwood, Carta & Kamps (1990) found that co-operation between children reinforced the combined efforts of the group rather than individual children's input which in turn stimulated natural sources of peer support and encouragement. As well as increasing the repertoire of resources and developing affective responses, there may be a more complex learning relationship that evolves through the combined inputs of children. For example, Kumpulainen's research (2001) suggests that peers might be at an appropriate level to scaffold and support each others learning within their zone of proximal development. Through an analysis of

language used by children working collaboratively during a computer-based writing session Kumpulainen found that children achieved more together than they might have achieved alone. She found that children fed off each other's inputs, extended inputs through making connections with their own ideas and progressed ideas through mutual discussion and negotiation. Co-operative learning not only stimulates collective reasoning but may teach children how to engage, learn and behave together within the school environment.

Mercer (2000), however, has shown through observational research in classrooms that interaction between children in paired or grouped activities is often unproductive, based on negative or disputational rather than constructive, exploratory styles of talking. This does not undermine the value of collaborative working but suggests that the teacher has a key role in designing and supporting the nature of joint activity within the classroom and in the interactions between children.

### **2.3 The teacher's role in supporting effective interactions**

The teacher holds a significant role within the operations of the classroom and the consequent learning experiences of children. Matusov (2001) investigated the concept of intersubjectivity as a way of informing the design of teaching methods within the classroom to develop an effective interactive learning environment in line with developmental theory. Matusov presented intersubjectivity within the classroom, across three dimensions. Firstly, intersubjectivity exists between the participants through having something in common. The teacher and children are involved in a shared enterprise through the construction of shared meaning. Learning is not constrained by or delivered through a pre-determined curriculum but rather a joint venture.

Secondly, intersubjectivity exists through the coordination of participants' contributions, where the teacher supports the interaction between children by scaffolding and co-ordinating turns and the development of their collective conversation. The teacher is actively involved in supporting joint activity through classroom interactions. Thirdly, intersubjectivity exists as human agency, where children have a degree of ownership and responsibility for their involvement in the learning, which may be shared with the teacher. Matusov's principles are explored with reference to current literature, across two main dimensions of teacher practice: sharing the enterprise of learning within the classroom and supporting the interactions between children in the classroom.

### **2.3.1 Sharing the enterprise of learning**

The relationship between the teacher and child should represent a two-way flow and co-construction of ideas (Rogoff, 1990; Bruner, 1996). Trevarthen (2002) suggests,

*"the teacher should always stand with the child – stand by the child in a shared enterprise, and to try to understand imaginatively how it all seems from the child's point of view."* (p.16)

Matusov (2001) suggests that to achieve intersubjectivity between the children and teacher, the teacher must be concerned with what the object of activity is for children. Thus the teacher and children are involved in a co-operative relationship. However, the object of activity must not be the same for the child and for the teacher. While the child and teacher pursue the enterprise of learning, their roles, are different as teachers have the

responsibility for guiding the direction of the learning (Rogoff, 1990; Bruner, 1996). This removes the focus of the teacher away from the curriculum content and learning outcomes, to the children's perception of the knowledge and understanding in relation to learning outcomes. Matusov (2001) suggests attempts to 'cover curriculum' result in teaching based on the one-way transmission of knowledge.

Mercer (2000) studied the interactions in Mexican classrooms and questioned whether those class teachers, who are considered more effective, differ in the ways that they interact with children. He questioned this on two levels. Do effective teachers provide better scaffolding for children's learning and what kind of learning do they encourage through their interactions? He derived three principles that were consistent across the teachers considered effective, in line with evidence of successful learning. The principles relate to the teachers engaging in a shared enterprise with the children and are explored in turn.

Firstly, effective teachers used interactive sequences to test knowledge and to guide the direction of their teaching based on the understanding of pupils. The teacher also encouraged exploration of the child's understanding by asking 'why' questions. Evidence suggests the shared enterprise of learning through the two-way transmission of meaning in the classroom is important for the teacher's learning, to inform their responses to children with regards both to their cognitive approaches and to the attitudes and feelings towards work. Shumow (1998) described how adults who are more aware of the strategies used by children to solve maths problems are more effective in supporting children, than adults who are not aware of the strategies. By

working with feedback from children and considering the learning from their perspective, it seems that teachers may be more effective educators. Meadows (1998) suggests that when learning is conducted interactively, it is scaffolded through the social context of discussion by the teacher and other children. The group construction of learning may be then internalised by the child. The learner takes control over what originated as external processes and ideas developing individual thoughts (Vygotsky, 1978). To Bruner (1966) this forms the core function of the teacher, as supporting children in developing skills to becoming self-correctors. The child takes control over their learning.

Secondly, the effective teachers taught problem solving procedures and explained the meaning and purpose of lessons as well as teaching the content of the subject. Exploring the purpose and nature of learning may help children to engage in the learning process. Thomson (1999) proposes that teachers need to involve children in the explicit process of their own learning, through eliciting their views regarding tasks. She argues that this interactive and metacognitive approach to learning is associated with children feeling more in control of their learning. Maclean (2000; 2003) supports this suggesting that involving the child in their learning process may lead to the child's self-regulation of their learning and reduce feelings of helplessness. Erickson (1996) suggests that children and the teacher should be able to swap the roles of expert and novice and contribute to the learning process. The teacher's position no longer reflects that of an expert with regards to the construction of knowledge but rather with regards to the design and support of the learning experience. Thus the teacher supports the skills of learning, while the content of learning is constructed through a shared process.

Thirdly, the effective teachers used the social, communicative nature of learning within the organisation of activities, i.e. in arranging exchanges between children, encouraging verbal responses and using the children's contributions as a resource within the class to build on the collective knowledge. Rommetveit (1989) suggests that for an environment to be truly co-operative the teacher must be integral in constructing the feedback process within the classroom by creating a 'recursive communicative process' within its design. This may involve not only systems that allow the teacher and children to respond and build on each other's inputs, but the development of skills in interacting and supporting the interactions. Yarrow and Topping (2001) highlight that when we speak, we receive constant verbal and nonverbal feedback from another person, which stimulates and modifies further thought and language within ourselves. Co-operative learning therefore provides a constant feedback mechanism into the children's learning as children build on and react to the teacher's and each others inputs, thus qualitatively effecting and extending their thinking. Working in an interactive environment, based on continuous feedback, may provide the critical dialogue that Vygotsky highlighted as essential for effective learning.

Hastings (1992) reported that by changing the nature of interactions with children and not necessarily the number of interactions, children may significantly increase their engagement with a task. This suggests that the child's motivational state and desire to learn may be manipulated by altering the interactive conditions within which a child approaches a task. The model presents teachers as an integral and significant component in the

construction of the child's motivational mindset. To achieve this, however, the teacher must develop trust that, given the appropriate conditions, children can be responsible for their own learning (Matusov, 2001).

### **2.3.2 Supporting interactions between children**

Matusov (2001) presented intersubjectivity as the coordination of participants' contributions, where the teacher supports children by scaffolding and co-ordinating turns and the development of conversation. Literature suggests that the conditions of effective learning through interaction between children, do not necessarily occur simply as a result of shared tasks (Mercer, 2000; Rojas-Drummond & Mercer, 2003). Children may fail to interact together or interact in ways that do not facilitate the construction of learning. Battistich & Watson (2003) propose that it is the role of the teacher to foster the relationships between children to achieve co-operative learning. The following literature suggests this may be achieved through making explicit the dialogic processes of classroom interaction and supporting effective kinds of talk that stimulate effective reasoning.

Mercer (2000) described the importance of meta-awareness of the dialogic processes used in the classroom and the implications of those processes for learning. On the basis of classroom observations, Mercer described that the ground rules of talk are typically not established and instead the process of understanding talk is left up to the child to work out. By establishing ground rules for the interaction between children, the teacher may increase the quality of feedback and consequently the nature of talk. Trevarthen & Aitken (2001) further suggest that if interpersonal functioning and relationships are considered to be particularly difficult for children, individualised support

through focusing explicitly on the early aspects of primary socio-emotional development in the classroom, such as imitation, turn taking and joint attention might be particularly effective.

Not all interaction-types are considered constructive for learning. Mercer (2000) presents 'exploratory talk' as the most effective kind of talk for children to engage in learning. He defines exploratory talk as being where,

*"parties engage critically but constructively with each other's ideas"*  
(p.153)

Exploratory talk represents a co-reasoning and negotiation of meaning, consistent with Vygotsky's theory of learning. However, Mercer describes that very little exploratory talk occurs naturally between children in the classroom. Rather classroom talk between children is typically cumulative talk, where children work together and build on their ideas, or disputational talk where children are competitive and negative about each other's ideas. After training children in the explicit ground rules of exploratory talk, Mercer (2000) found that children increased their use of words like 'because', 'if' and 'why' where they would give justifications for their reasoning. Further observations of classroom talk found a high incidence of such reasoning words when children were engaged in critical and constructive discussions together.

Rojas-Drummond & Mercer (2003) considered the relationship between interactional styles and the development of individual and collective reasoning skills. The study suggests that effective co-operative processes

between children in this culture do not necessarily develop without certain conditions being satisfied. They considered the value of peer group discussion and the nature of teacher-pupil interaction. In the experimental group, children engaged in exploratory talk with each other, initiated by the teacher after training. Individual and collective reasoning skills were assessed before and after twelve lessons, and scores were compared to a control group. When assessed for collective reasoning skills, the children in the exploratory-talk group solved questions more successfully. Transcripts demonstrated the progression of reasoning that took place between the children and were easily distinguishable from the control group transcripts. Control group transcripts consisted mainly of short utterances and counter assertions, without explicit reasoning. Children from the target class also performed more successfully on individual assessments. The results are empowering for teachers. They suggest that, in line with socio-cultural theory, assessment scores are not the result of individual ability but of the collective processes that help to form thoughts. The teacher is in the key position to optimally arrange the collective thought processes within the classroom and to provide opportunity and support to children.

Literature suggests teachers must help children value the contributions and involvement of others, within their own behaviour and in the design of learning activities. Hughes, Cavell & Willson (2001) suggest teacher-child interaction can affect the way peers perceive each other and impact on the social dynamics between children. They suggest that the children's perceptions of the teacher's support may function as an 'affective bias', impacting on children's perceptions of each other's competencies and how likeable they consider the child to be. The nature of talk within the

discussion may also impact on the nature of relationships between children. Cumulative talk, defined by Mercer (2000) as talk where children build on each others contributions, may have a constructive, social function within the classroom. Coates (1994) suggested that the co-operative structure of such talk, as well as the implicit referencing that occurs through the development of shared language and meaning, helps to strengthen the relationships between the speakers with regards to intimacy and understanding.

The studies above present a theoretical perspective in line with social-constructivism where children support, extend and explore meaning together. Children may need practice and support in engaging in interaction together to elicit the benefits of co-operative learning across cognitive, attitudinal and affective dimensions. The teacher has an essential role in recognising and structuring classroom interactions to optimise processes of learning. However, Pianta (1999) proposes that teachers have been taught to recognise and work with children's zones of proximal development (see Vygotsky, 1978) within the domain of cognitive development, but not in the domain of psycho-social development. Learning theory presents that it is within the psycho-social interaction that cognitive development occurs (Trevanthen, 1979, 2002). The process of sharing and constructing meaning with a partner requires skill and focus on communication, beyond the content of the activity.

#### **2.4 The context for this study**

This study aims to develop the role of the teacher in line with the principles of interaction discussed. The context for the study is a residential school for children considered as having social, emotional and behavioural difficulties

(SEBD). This section briefly considers the context of intervention, and how intervention might be best targeted, and considers the nature of teacher development through self-reflection.

#### **2.4.1 Children labelled as SEBD in residential care**

The term SEBD is a social construction developed within an educational model to account for a population of children considered to have difficulties with social integration, behaviour and emotion (Jones, 2003). The definition and diagnosis of SEBD is described as being likely to vary according to contextual variables, particularly the behaviour, attitude, expectations and skills of the teacher (Department for education, 1994). This interactionist definition takes account of what the child brings to the context and of the context itself. Rutter et al. (1979) recognised the implications of ecological factors within a child's life with regards to their social and emotional development. They surveyed incidences of disruptive behaviour and truancy across schools and attributed between-school differences not to the children or social-economic status, but to differences in school ethos. This landmark study removed the focus of SEBD from exclusively within the child.

Some children considered as being within the population enter residential care. Young people in local authority care typically fall behind in attainment, gain fewer qualifications and are more likely to be excluded from school. Up to 75% leave school with no qualifications and less than 1% go to university (Scottish Executive, 2001a). The lack of attainment from schooling is often associated with poor life opportunity (Broad, 1998), however, the nature of the processes of schooling must also be addressed. To help local authorities reach national achievement targets for children and young people in care,

strategies have been introduced. Resources have been channelled to provide every looked after child with an *'educationally rich environment'* (Scottish Executive, 2001b). This has been addressed firstly, by the provision of computers, books and education areas in residential units and secondly, by training staff in technology and increasing awareness of the educational needs of looked after children. However, to create an *'educationally rich environment'*, the key processes in schooling that promote effective learning must be further explored and developed.

Interventions to support the learning and behaviour of young people must address the systems within which their learning and behaviour is constructed and the key people who design and implement those systems. Reid (1993) considered literature describing the effectiveness of interventions with children displaying anti-social behaviour patterns. He found the most *'promising'* interventions focused on the,

*'social interactional fabric in which the child's behaviour problems were embedded'* (p.420)

Learning and behaving must be considered as integral components of the classroom context, not attributes of the child (Corrie, 2002) and interventions may then be targeted appropriately.

#### **2.4.2 Developing teaching skills through self-reflection**

This study focuses on developing teachers skills in creating and supporting an interactive learning environment. Ainscow (2003) suggests that schools typically have more knowledge and expertise than they use, and

development work should focus on finding better ways of using that creativity, skill and knowledge. Skill development may be facilitated by helping the teacher become aware of current skills and how they might be extended in context. This may also include supporting the teacher in developing awareness of their involvement in the child's 'social interactional fabric'. Poulou & Norwich (2000) found that in working with children with emotional and behavioural difficulties, Greek teachers typically attributed a child's difficulties to factors within the child or family. Teachers saw a role for themselves in supporting interventions, however, they did not consider themselves within the context of the difficulty. Dowrick (1999) suggests skills may be developed through observation and self-modelling and refers to self-modelling as,

*"the potential for people to learn from images of their own adaptive behaviour"* (p.23).

Video may be used as a means to focus on specific approximations in the development of new skills. The method is considered powerful due to the inescapable similarity between the model and the learner. Furthermore, Dowrick suggests that if the observed skill is valued, the method may also instil self-belief in the observer. For example, in working with mother and baby interactions, through observing and reflecting on behaviours on video, the mother extended the desired behaviours (Hundeide, 1981).

'Video interactive guidance' (VIG) is a method that uses the principle of intersubjectivity to guide observations of interactive behaviour on video (Forsyth, Kennedy & Simpson 1995). The aim is to improve the quality of

interaction between those involved by reinforcing the positive elements of communication observed in interactive sequences. The basic elements of communication, known as the contact principles, are identified and arranged into a framework relating to different levels of interaction. Communicative elements representing attentional processes between two people and how they receive each other are considered to represent primary intersubjectivity and to form the foundation of all communication. Upon this foundation, how the participants develop secondary intersubjectivity through co-operation and turn taking is considered. Finally, the learning process is explored relating to how learning is being scaffolded and mediated and how initiatives are being shared to allow the two-way interaction of ideas to develop. The adult is active in identifying the contact principles within their own interactions and considers how to develop their communication further.

This method has been used with some success in a range of educational settings. For example, Kaye, Forsyth and Simpson (2000) considered the intersubjectivity and mediation of learning within five primary classes, where challenging behaviour from children was highlighted as a concern. They used 'video interactive guidance' to focus on the teacher-child interaction within the class. The results of this work showed increases in the number of pupil initiations to teachers, potentially creating a more interactive and child-led learning environment.

Matusov (2001) acknowledges the aim of achieving intersubjectivity within the classroom is likely to be qualitatively different from what the teachers experienced as learners, and trained in as teachers. Teachers will need support in the conceptualisation of the learning environment as well as

practical support in implementing strategies. This study uses a similar model of video reflection and analysis. The framework for reflection of interactions is designed in line with the principles discussed above in the formation of an interactive learning environment. The method relies on the premise that given the right conditions, the learner has the power to change themselves.

## Chapter 3

# Methodology

The methodology sets out the development of the intervention process based on a constructivist paradigm. The flexible design process is documented in stages to allow the reader to follow the progression of ideas and the construction of meaning over time. Observational data coding is detailed with measures taken to promote validity and reliability of coding observations.

### 3.1 Research questions

The study will explore the development of teacher practice before and after intervention based on the aims of engaging the two-way interaction of ideas in the classroom and supporting the interactions between children. In relation to developments in teacher practice, the following questions will be addressed through the analysis of child interactions.

1. Will child-talk time increase proportionally during discussion?
2. Will the time spent by children extending their own ideas with the teacher increase?
3. Will the time spent by children extending their own ideas with another child increase?
4. Will the time spent by children extending each others ideas increase?
5. Will the amount of negative and off-task talk by children in the classroom decrease?

### **3.2 Research paradigm**

The research is founded upon a constructivist paradigm, which asserts that reality is socially constructed (Robson, 2002). This constructivist research recognises change as a developmental process embedded in real practice. The research participants are involved in helping to construct the meaning and 'reality' out of what is observed. The meaning of what is observed is therefore elicited and triangulated and fed back into the research design process. The research also recognises that there may be multiple realities constructed across and within individuals and thus a multiple case study design is employed.

This study also employs a dynamic systems theory (see Pepler, Craig & O'Connell, 1999) in considering the construction of reality, to explore the interactive processes in the classroom. A dynamic systems approach focuses on the interactive processes at different levels of an ecological system (see Bronfenbrenner, 1979). In this case the interactive processes within the classroom are studied both between the teacher and children and between the children.

### **3.3 The context of intervention**

#### **3.3.1 The school**

This intervention took place in a residential school for children aged 4-12 (Primary school age, Scotland) identified as having social, emotional and behavioural difficulties. Children were referred to the school from local authorities across the country. The school has a maximum capacity of 36 children with 29 children attending at the time of the intervention, all of

whom were boys. The school employed 8 teaching staff, 10 classroom assistants, and 2 auxiliary staff.

### **3.3.2 Participants**

Six teachers were involved in the study with five providing suitable videos for research purposes. The opportunity was available to all teachers in the school and staff opted in voluntarily. Those involved represent teachers who were interested in development and felt relatively comfortable with the video component of the programme.

The children at the school opted in voluntarily to be involved in the work. The issue of consent regarding the use of video with children was addressed with the children, their carers/parents and with social workers, where appropriate. Two children initially opted out of being filmed but opted in once they became more familiar with the video camera.

### **3.4 The research design and intervention process**

The research is based on a multiple case study design with comparative analysis of change in talk patterns before and after the intervention and detailed analysis of individual case studies. A flexible design was used, allowing the needs analysis process to inform the research design as an ongoing process. This allowed the research design to evolve in line with the development needs of the participants. See appendix 2 for a diagram of the intervention and research design.

The intervention process took place over 7 stages, including both needs analysis processes and direct intervention work. Aims for each section were derived according to the ongoing needs analysis process.

### ***Needs analysis phase I: management consultation***

The school had a history of involvement in video interactive guidance (see Kaye, Forsyth & Simpson, 2000) and considered the method a useful development tool for teachers. The management team requested further training to promote effective interactions within the classroom. Through consultation with education management the following aims were drafted:

1. To respond to the development needs of teachers and embed training within everyday practice to establish a development tool.
2. To give teachers the opportunity to reflect on their interactions with children through an introduction to current learning theory and reflection on practice through video recordings.
3. To document the effects of training over time through comparison of pre and post intervention videos of teacher-children interactions.

### ***Pre-intervention video recordings***

Prior to involvement with teachers, they were requested to produce two half hour video recordings of themselves in a group discussion activity with children. Two random 6 minute clips were then selected giving a total of 12 minutes of interaction time for analysis. To reduce variability in the way videos were taken across teachers, conditions were introduced for video recording in the classrooms. The video was to capture the adult working with

a group of children in an interactive teaching and learning scenario. The nature of the lesson recorded was to remain consistent across all videos.

To reduce disruption to children, education management requested that no unfamiliar adults would enter classrooms. Classroom assistants and teachers therefore took the videos. This was considered optimal for ecological validity as there would be little change in the daily routine of the school.

### ***Intervention phase I: Training session 1***

*Working for effective interactions with children: An introductory session*

Training session 1 introduced the importance and analysis of interactions in the classroom, through the work of Trevarthen (1979, 2002). The contact principles (see Kaye, Forsyth & Simpson, 2000) were presented as a developmental tool to guide practice. A training booklet was designed for the session (see appendix 3a) and an evaluation of the training was conducted through a brief questionnaire (see appendix 3b).

### ***Needs analysis phase II: formative evaluation***

Evaluation forms from training session 1 were analysed. Teachers responded that the training provided a useful framework to consider their classroom practice and requested more input on supporting children's learning, with more opportunity to be actively involved in identifying elements of interaction in classroom situations.

### ***Intervention phase II: Training session 2***

*Working for effective interactions with children: An activity session*

Training session 2 was highly interactive. Interactive education scenarios were analysed by participants on the basis of the contact principles. Participants focused on how the adult involved children in learning through the development of ideas and how interaction was achieved by groups of children. Skills were developed in looking at the interactions between the teacher and children as well as looking at interactions between children. An activity booklet and prompt cards of interactive principles were introduced for use to be continued throughout further training (see appendices 4a and 4b).

Participants were requested to record their involvement with a group of children during a class discussion activity, and to identify three short clips that represent effective interactions.

### ***Needs analysis phase III: video analysis***

The videos were analysed individually with teachers. The following themes emerged across all classroom discussions with children and teachers.

- The development of ideas typically came from and was controlled by the teacher's initiative. Many teachers sought responses from children, however, these responses were not extended and did not inform the development of ideas.
- Interactive processes between children within the classroom were minimal as most interaction was directed from an individual to the teacher.
- The interaction between children was considered to be competitive for the teacher's attention and often preceded negative behaviours.

Training aims were established with the teachers:

1. *To establish the two-way interaction of ideas within class discussion.*

Teachers would aim to extend children's ideas and request children to extend on their own ideas more.

1. *To support the interaction and co-operation between children.*

Teachers would aim to create links between what children say and provide a scaffold for their communication.

### ***Intervention phase III: Video analysis sessions***

Three video analysis sessions were held with each teacher over a period of six weeks. Each teacher prepared a video for study at each analysis session which was to adhere to the conditions set. Sessions were collaborative where meaning was negotiated and constructed between the researcher and the teacher. To optimise the analysis sessions and increase consistency across teachers' experiences, the researcher developed a staged process for collaborative reflection. This process was initiated at each analysis session.

1. *Develop shared meaning.* Targets and target behaviours were re-explored and negotiated collaboratively, to allow language and meaning to develop within a shared understanding.
2. *Activate teacher's thinking.* Conversations aimed to extend the ideas and understanding of the teacher and evolve according to the shared meanings above.
3. *Respond with support before challenge.* Teacher's inputs were received in a supportive way, before being extended or challenged.
4. *Check understanding before moving on.* Ideas were checked out through discussion before new ideas were discussed.

***Intervention phase IV: Plenary session***

On completion of the video analysis sessions, the teachers came together to discuss their impressions of the training, share developments in their classroom practice through demonstration of skills on video, and discuss opportunities for continuation of skill development and use of video as a development tool.

***Post-intervention video recordings***

Teachers were requested to again prepare two half hour videos of classroom discussion activity involving them and a group of children. Again, two random 6 minute clips were selected giving a total interaction time of 12 minutes for analysis.

**3.5 Observational data coding and analysis**

A coding system (see Table 3.1) was developed to categorise conversation during interactive sequences. Pre and post intervention videos were compared using software for observational data 'The Observer' (Noldus, 2003) and SPSS, 11.5. 'The Observer' was also used as a support to structure the coding system.

The coding was developed in two ways:

1. In collaboration with the teachers, during video analysis sessions, the basis to the coding system was established. Basic themes were identified relating to the aims which evolved into the identification of particular behaviours.
2. These categories were further refined through pilot video analyses of the teachers and children, that were not used in the research.

Three independent coding systems were devised to address the research questions.

- System 1 looked at the teacher's behaviour in achieving the two-way interaction of ideas in the classroom and also considered the referents of teacher-talk.
- System 2 looked at the teacher's behaviour in supporting the co-operation between children in the classroom.
- System 3 looked at the children's behaviour in interactions both with the teacher and with each other.

Codes for systems 1 and 3 were designed to be mutually exclusive and exhaustive, focusing on states of behaviour, measurable over a duration. This was to capture how much interaction time was taken by particular types of interaction. Codes for system 2 were designed to capture the number of times a particular event occurred, providing frequencies of teacher behaviour.

Table 3.1: Coding system for teacher-child and child-child interactions.

**Coding system 1: State sampling**

<b>Teacher-talk aimed at establishing two-way interaction</b>	
Extend child's input	Teacher extends an idea introduced by a child
Request extension	Teacher requests child to extend child's idea further
Give information C/B/P	Teacher gives information regarding own idea
Make request C/B/P	Teacher makes request regarding own idea
C=content	Teacher refers to the content of the lesson
B=behaviour	Teacher refers to behaviour
P=process co-operation	Teacher refers to the process of co-operation

**Coding system 2: Event sampling**

<b>Teacher-talk aimed at supporting co-operation between children</b>	
Pass child A to child B	Teacher passes an input from one child to another child for comment/extension
Pass child A to group	Teacher passes an input from one child to the group of children for comment/extension
Link children's inputs	Teacher creates links between children's inputs

**Coding system 3: State sampling**

<b>Child-talk between children and with the teacher</b>	
Child-initiate-teacher	Child makes a new initiative to the teacher
Child-initiate-child	Child makes a new initiative to another child
Child-extend-teacher	Child extends the idea introduced by the teacher
Child-extend-child	Child extends the idea introduced by another child
Child-self-teacher	Child extends their own idea with the teacher
Child-self-child	Child extends their own idea with another child
Child-teacher-neg	Child is negative or off-task with the teacher
Child-child-neg	Child is negative or off-task with another child

The construct validity of the coding system is considered high, as it was developed through collaboration with the participant teachers. This functioned to reduce erroneous interpretations of behaviours when devising the codes. Triangulation with an independent observer allowed for further discussion regarding the behavioural representation and range of particular codes to ensure exclusivity of coding was achieved.

The reliability of the coding system was considered in three ways.

1. Intra-rater reliability was assessed for the main coder at two 3 day intervals and was achieved for 10% of the total sample at 82.90% ( $r=0.81$ ).
2. Inter-rater reliability was achieved with one related observer during the piloting of the coding system at 80.00% for 10% of the total sample ( $r=0.78$ ).
3. Inter-rater reliability was achieved with an independent rater at the completion of the coding system for a further 10% of the total sample at 78.72% ( $r=0.77$ ).

### **3.6 Attitudinal data gathering and coding**

Participants filled out a pre and post intervention questionnaire exploring the important features of positive interactions with children in the classroom (see appendix 5a). To increase the validity of the meaning of information extracted from questionnaires, responses were discussed verbally with teachers. Responses were categorised according to the level of interaction they represent:

- One-sided responses - reflect only the teachers perspective
- Semi-interactive responses - recognises the child's point of view
- Interactive responses - recognises the interaction between the teacher and the child

Participants also filled out an evaluation questionnaire regarding their impressions of the effect of the training on their practice in interactions with children (see appendix 5b).

## Chapter 4

### Results

The data was micro-analysed using the coding systems to identify general trends in the development of talk-types before and after the intervention.

- Analysis A explores teacher-talk before and after intervention, in relation to the first aim, *'two-way interaction of ideas'*.
- Analysis B explores teacher-talk before and after intervention, in relation to the second aim, *'supporting co-operation between children'*.
- Analysis C explores child-talk with the teacher and with other children, before and after intervention in relation to analyses A and B.

Following this, the process of change in talk-types over the duration of the intervention is considered. Detailed case studies for each of the five teaching groups are then presented, followed by a summary of the results. Finally, results from the qualitative analysis of perceptions and evaluations of classroom interactions are presented.

Each pie chart represents a total talk-time of 12 minutes (720 seconds) of classroom interaction. For actual talk-times from which statistics are derived see appendix 6.

#### **4.1 Analysis A: The two-way interaction of ideas**

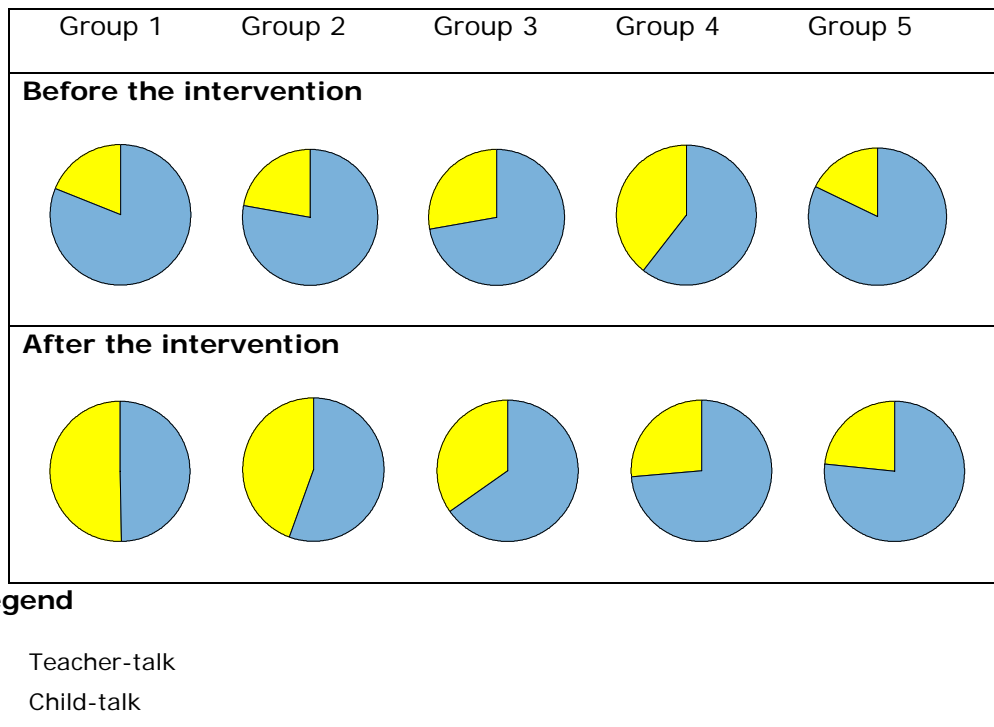
In considering the level of two-way interaction in classroom discussion activities, teacher-talk is explored. Analysis explores the proportion of

teacher and child talk times, and the extent to which teachers extend children's ideas, within total interaction times.

#### 4.1.1 The proportion of teacher-talk to child-talk

The proportion of time spent talking by teachers and children was compared before and after the intervention (see Figure 4.1).

**Figure 4.1:** Talk-time of teachers and children before and after intervention.

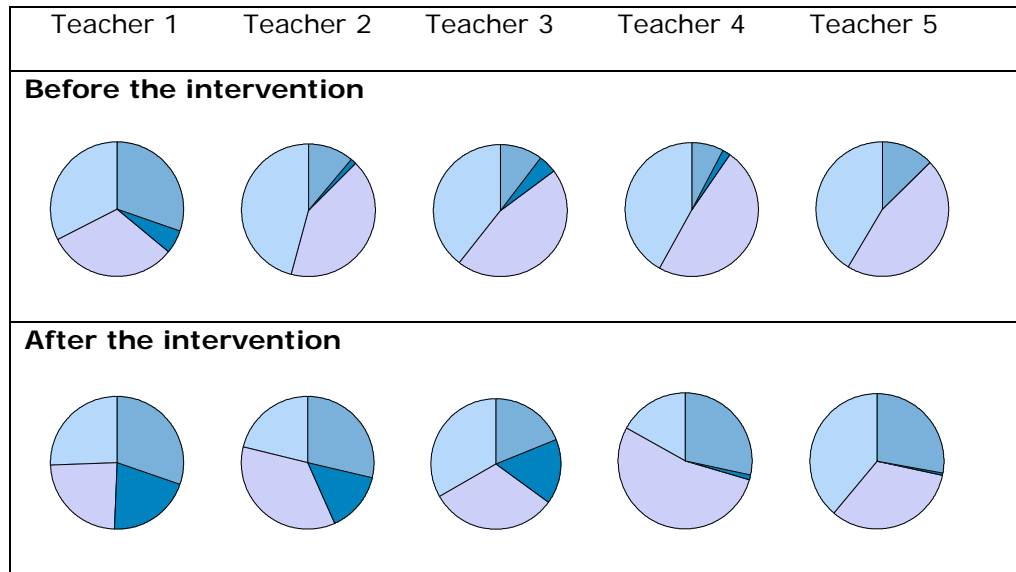


Across all 5 groups, there were no significant differences in the proportions of teacher-talk to child-talk time before and after the intervention, although in individual cases like groups 1 and 2, there are substantial increases in the proportion of child-talk time.





#### 4.1.1 Teacher-talk based on teacher's and children's ideas

The nature of teacher-talk was compared before and after the intervention (see Figure 4.2).

Figure 4.2: The nature of teacher-talk before and after intervention.



#### Legend

-  Teacher extends an idea introduced by a child
-  Teacher requests child to extend child's idea further
-  Teacher gives information regarding own lesson/idea
-  Teacher makes request regarding own lesson/idea

All teachers significantly increased the time spent focused on a child's idea ( $t=-2.502$ ,  $df=4$ ,  $p=0.0335$ , 1-tailed).

- All teacher increased time spent extending children's ideas with a mean time increase from 67.16s to 102.02s. This difference was not significant.
- Three teachers increased time requesting children to extend their ideas, with a significant overall increase in the mean time from 12.66s to 35.98s ( $t=-2.334$ ,  $df=4$ ,  $p=0.04$ , 1-tailed).

There was a significant reduction in time spent by teachers focusing on their own idea ( $t=2.543$ ,  $df=4$ ,  $p=0.032$ , 1-tailed).

- Four teachers reduced the time spent giving information to children with the mean falling from 182.53s to 140.22s. This was not significant.

All teachers reduced time spent making requests to children. The mean time dropped significantly from 174.46s to 100.26 ( $t=3.426$ ,  $df=4$ ,  $t=0.014$ , 1-tailed).

## 4.2 Analysis B: Supporting the co-operation between children

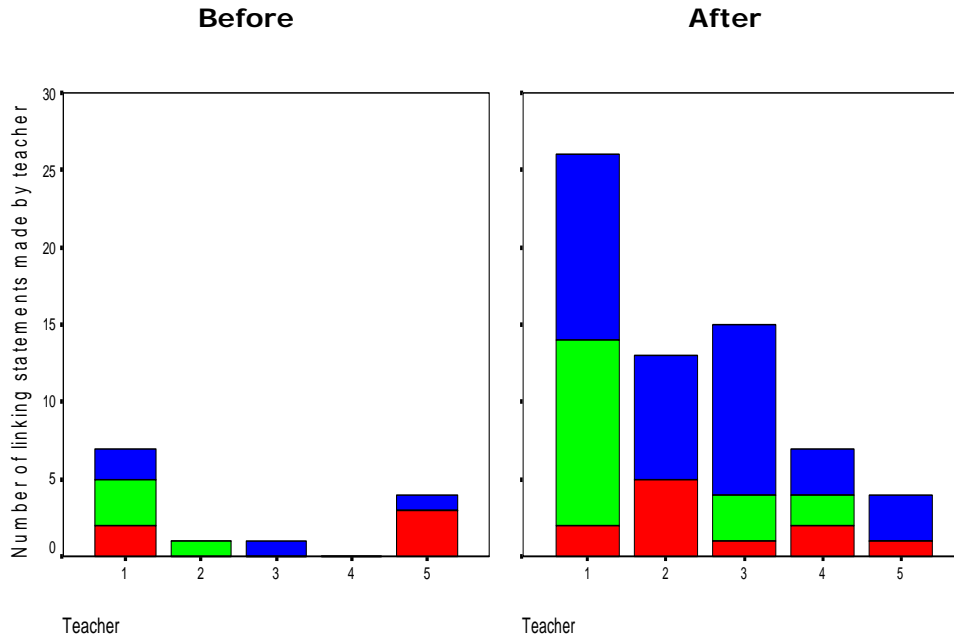
In considering the role of the teacher in supporting the co-operation between children, the use of linking statements is explored. Following this, the referents of teacher-talk are explored to consider the time spent supporting the process of co-operation before and after intervention.

### 4.2.1 The use of linking statements

The use of linking statements dramatically increased in post-intervention observations (see figure 4.3). The study defined and coded three main ways the teacher might link children's inputs. These are presented with examples from the recorded dialogue of classroom discussion:

1. Linking children's inputs: *"and that relates to what you [referring to another child] said about smoking being a drug..."*
2. Passing from child A to child B: *"What do you think about what he said, do you think it's a good thing?"*
3. Passing from child A to group: *"You like to be alone? Do you all think it's ok for him to be on his own when he feels sad?"*

**Figure 4.3:** Bar charts showing use of linking statements before and after intervention.



### Legend

- Link child's inputs together
- Pass input from child A to the group
- Pass input from child A to child B

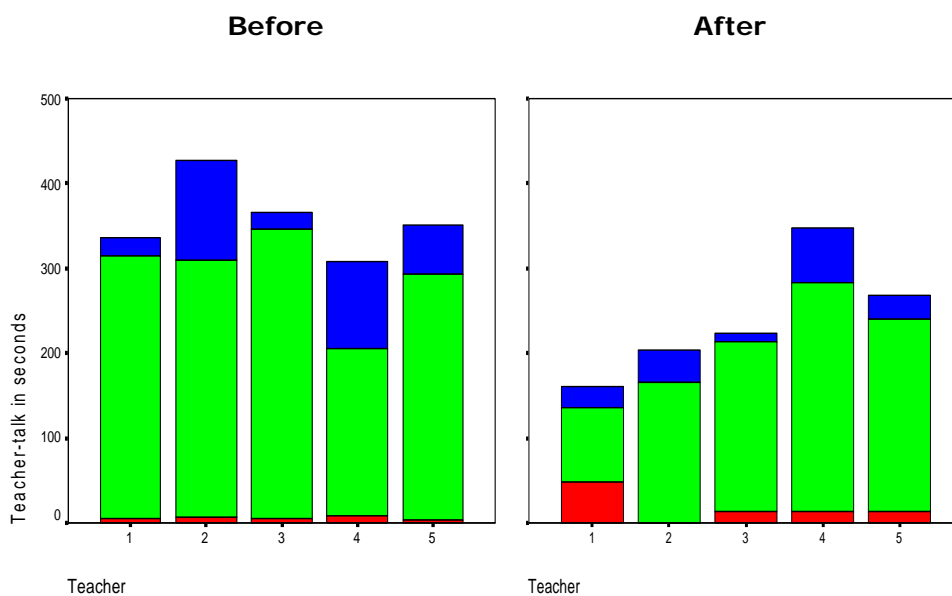
There was a significant increase in the overall number of linking statements used by teachers ( $t=-3.057$ ,  $df=4$ ,  $p=0.019$ , 1-tailed).

- This increase was mostly accounted for by the use of statements 'linking children's inputs', with a mean increase from 0.8 to 7.4 statements ( $t=-3.836$ ,  $df=4$ ,  $p=0.009$ , 1-tailed).
- 'Passing from child A to child B' increased in mean number of uses from 1.0 to 2.2, and 'passing from child A to the group' increased in mean number of uses from 0.8 to 3.4, however, neither were significant.

### 4.2.2 Teacher-talk referents

Within teacher-talk, changes were found in the nature of what was said (see figure 4.4). Teacher-talk generally referred to one of 3 areas: the process of co-operation, the content of the lesson, or behaviour.

Figure 4.4: Bar charts showing teacher-talk referents before and after intervention.



#### Legend

- Teacher-talk referring to behaviour
- Teacher-talk referring to the content of her idea
- Teacher-talk referring to the process of co-operation

- Four teachers increased the time talking about the process of co-operation, with a mean time increase from 5.47s to 17.10s. This was not significant.
- Four teachers decreased the time talking about content, with a drop in mean time from 287.86s to 190.43s. This was not significant.

- Four teachers decreased the time talking about behaviour with a mean reduction from 64.36s to 33.44s. This difference across all 5 teachers was significant ( $t=2.187$ ,  $df=4$ ,  $p=0.047$ ).

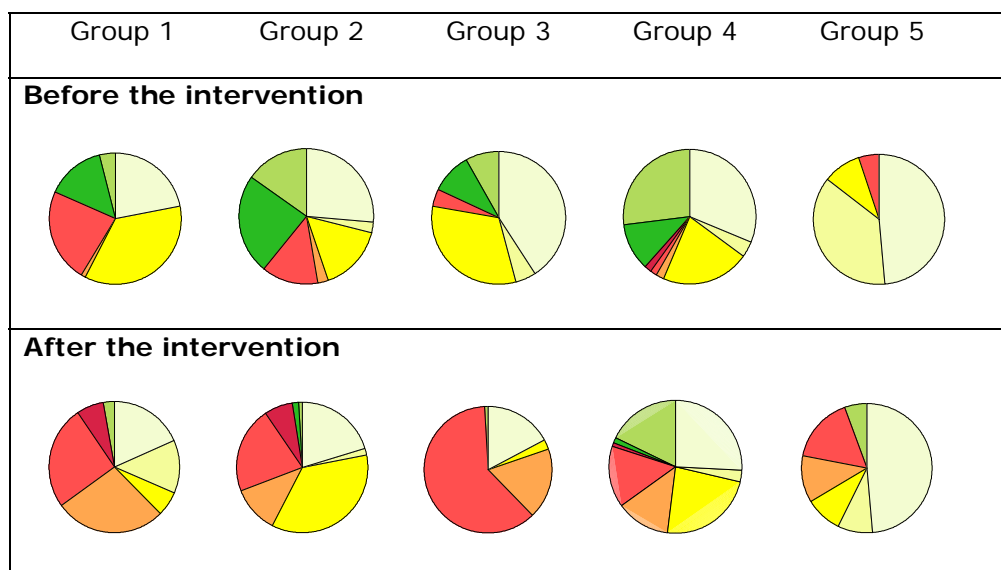
### 4.3 Analysis C: Exploring the nature of child-talk

Child-talk patterns are explored before and after the intervention across three main dimensions. Firstly, the analysis considers the time children are engaged in extending ideas within discussions, secondly, the amount of child-child interaction, and thirdly, the amount of negative/off-task interaction by children with children and teachers. Within each dimension the changes in child-talk are explored with reference to the changes in teacher-talk.









#### 4.3.1 Children extending children's ideas

The nature of child-talk was compared before and after intervention (see figure 4.5).

Figure 4.5: The nature of child-talk before and after intervention.



### Legend

	Child making initiative to teacher
	Child making initiative to another child
	Child extending what the teacher is saying
	Child extending what another child is saying
	Child extending their own idea with the teacher
	Child extending their own idea with another child
	Child interacting interacting with teacher in negative/off-task way
	Child interacting interacting with child in negative/off-task way

Across all groups, there were significant increases in the time spent by children extending their own ideas ( $t=-3.287$ ,  $df=4$ ,  $p=0.015$ , 1-tailed).

- Children significantly increased the time spent extending their own ideas with the teacher, with a mean increase from 12.25s to 60.74s ( $t=-3.019$ ,  $df=4$ ,  $t=0.039$ , 1-tailed).
- The mean time spent by children extending their own ideas with another child increased from 0.77s to 8.82s. This difference was not significant.

Across all groups, there were significant increases in the amount of time spent by children, extending the ideas of other children. The mean time increased from 1.80s to 38.89s ( $t=-2.808$ ,  $df=4$ ,  $p=0.048$ , 1-tailed).

Relationships were found between aspects of child-talk and teacher-talk:

- Before intervention, there was a positive correlation between teacher-talk extending children's inputs, and child-talk extending their own ideas ( $r=0.842$ ,  $p=0.037$ ,  $n=5$ , 1-tailed).
- After intervention, teacher-talk requesting children to extend their ideas was positively correlated with child-talk extending their ideas (0.973,  $p=0.003$ ,  $n=5$ , 1-tailed).

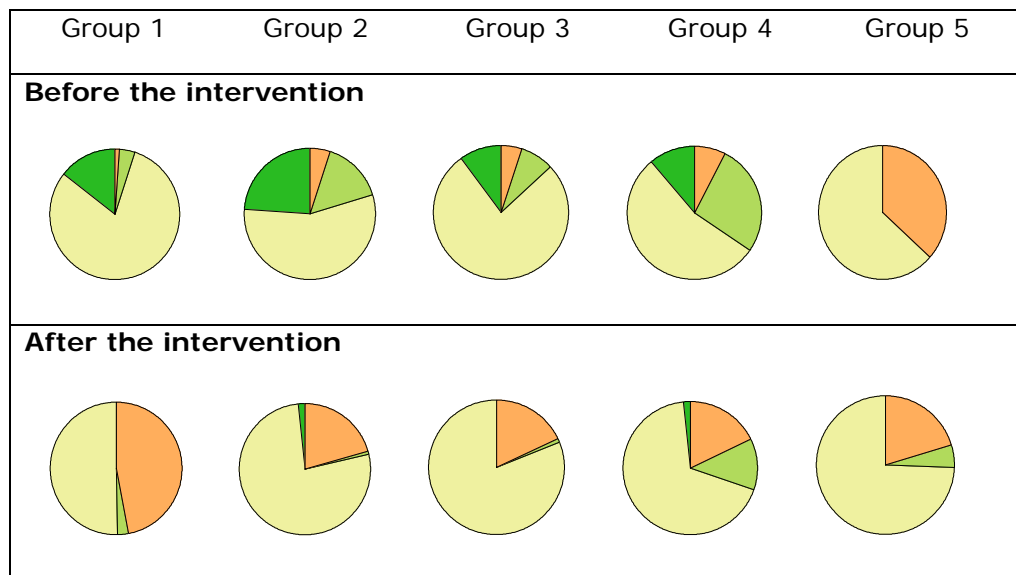
- After intervention, teacher-talk focusing on children's input was positively correlated with child-talk extending their own input with other children ( $r=0.843$ ,  $p=0.036$ ,  $n=5$ , 1-tailed).

A sequential lag analysis was performed to identify patterns in the data, where one talk-type might repeatedly follow another. However, no significant patterns were found.

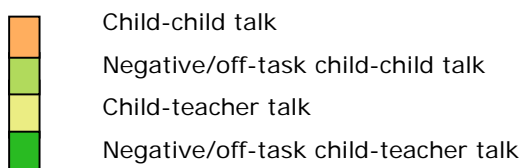
#### 4.3.2 Child-child interaction

The amount of child-teacher and child-child talk was compared before and after intervention (see figure 4.6).

Figure 4.6: Child-talk with teachers and with children before and after intervention.



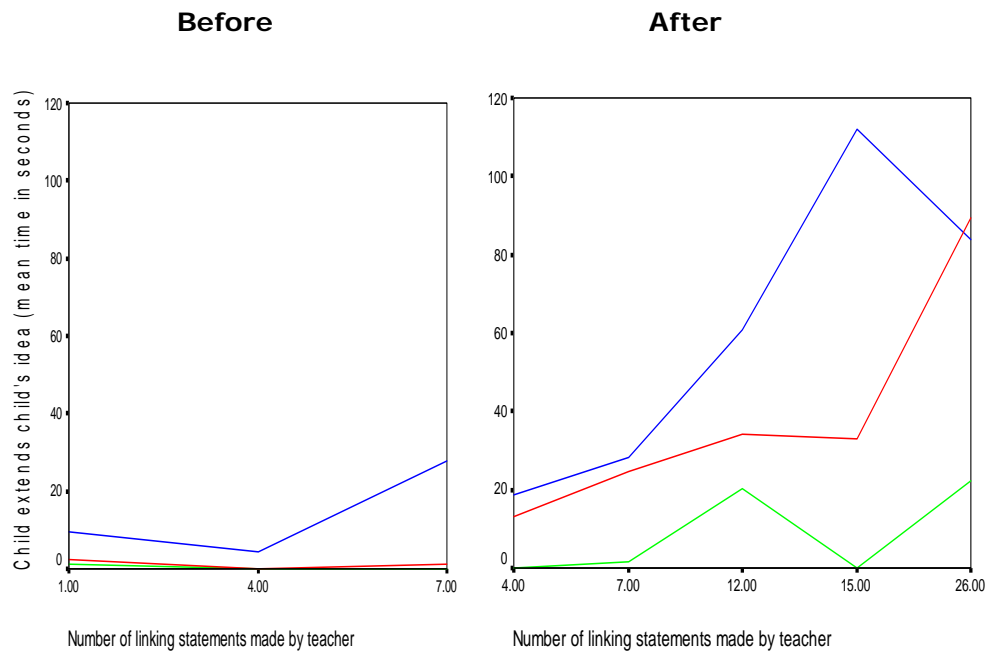
#### Legend



There was a considerable increase in the amount of child-child talk across 4 groups, with an overall mean increase from 12.83s to 60.11, however, this difference was not significant. Notice that group 5 shows a decrease in the amount of child-child talk.

The relationships between the use of linking statements by the teacher and the child interactions, before and after the intervention was explored (see figure 4.7)

**Figure 4.7:** Line graphs showing the relationship between children extending children’s ideas and the use of linking statements.



**Legend**

- Child extending another child’s idea
- Child extending their own idea with another child
- Child extending their own idea with the teacher

- Before intervention, there were no positive correlations between the use of linking statements and child-child talk.
- After intervention, the use of linking statements was positively correlated with child-child talk ( $r=0.845$ ,  $p=0.036$ ,  $n=5$ , 1-tailed).
- This correlation was particularly strong for the teacher making links between the children's inputs ( $r=0.985$ ,  $p=0.001$ ,  $n=5$ , 1-tailed).
- A sequential lag analysis was conducted to find if a particular talk-type followed particular linking statements. No significant pattern of child interaction followed the link statements.

#### **4.3.4 Negative/off-task child-talk**

Across 4 groups the amount of negative/off-task child-talk substantially reduced, with an overall significant decrease in the mean from 37.73s to 9.86s ( $t=2.349$ ,  $df=4$ ,  $p=0.039$ , 1-tailed).

- The amount of negative/off-task child-talk directed at the teacher decreased. Mean times dropped from 18.10s to 1.54s ( $t=3.470$ ,  $df=4$ ,  $p=0.013$ , 1-tailed).
- The mean time for negative/off-task child-talk directed at other children dropped from 19.63s to 8.31s. This difference was not significant.

Relationships between teacher-talk and negative/off-task child-talk were explored:

- Before intervention, child-talk extending other children's ideas was correlated with overall negative/off-task child-talk ( $r=0.932$ ,  $p=0.021$ ,  $n=5$ , 2-tailed).

- Before intervention, child-talk extending their own ideas with other children was significantly correlated with negative/off-task talk with other children ( $r=0.944$ ,  $p=0.016$ ,  $n=5$ , 2-tailed).
- After intervention, there was no positive correlation between negative/off-task talk by children and other child-talk.

#### 4.4 The developmental process of change in talk-types

Through observations of and discussions with teachers a record of development was kept, documenting the nature of change in teacher-child interactions over time (see table 4.1). The two development targets negotiated with teachers regarding the two-way interaction of ideas, and supporting co-operation between children, formed identifiable stages of development. In no instance were both targets developed simultaneously. Overall development proceeded through the three phases.

Table 4.1: The developmental process of change in talk-types.

##### PHASE 1

- Teacher makes initiatives to children based on her own ideas.
- Interaction within the classroom is directed at teacher.
- Teacher responds to children individually.
- Children are involved in competitive, aggressive interactions.

##### PHASE II

- Teacher increases the time focused on extending children's ideas.
- Children are more involved in the evolution of ideas in the discussion.
- Children build on their own ideas channelled through the teacher.
- Negative/off-task interactions between children reduce.

**PHASE III**

- Teacher supports the process of co-operation between children.
- Teacher responds to children as members of a collective group by linking children and their ideas together.
- Children begin to build on each other's ideas more directly.
- Negative/off-task interactions between children reduce further.

**4.5 Individual case studies**

The individual case studies present the level of preparation of each teacher throughout the training, their relative starting points in the developmental process, and document the change in talk types with regards to both teacher-talk and child-talk.

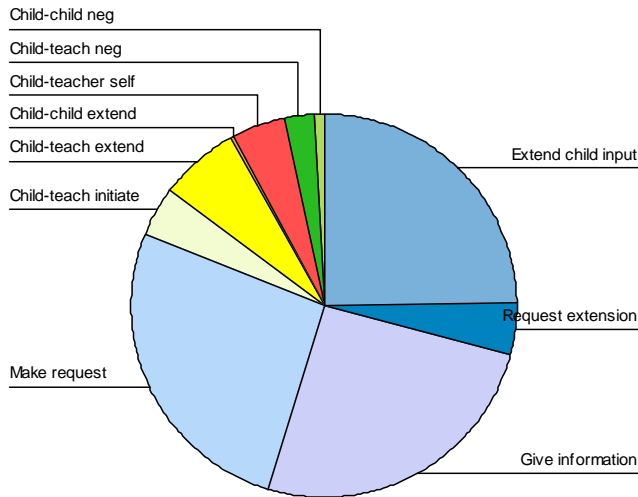
**TEACHER 1 (T1)**

T1 reflected openly on her classroom interactions and prepared for video analysis sessions through ongoing consideration of targets in the classroom. At the beginning of training, T1 showed evidence of phase II interactions and this was reflected in her targets. T1 went on to develop skills in phase III (see figure 4.8).

**Figure 4.8:** Pie charts showing nature of group 1 interactions before and after intervention.

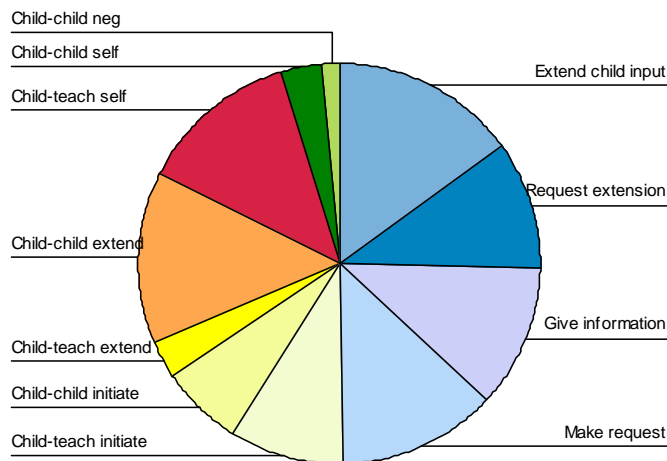
**Before intervention**

*Linking statements = 7*



**After intervention**

*Linking statements = 26*



**Changes in teacher-talk:**

- Teacher-talk decreased from 81.15% to 49.80% of the total talk-time.
- The time spent on the teachers agenda decreased from 64.04% to 49.33%, while the time spent extending children’s ideas increased from

30.41% to 50.67% of teacher-talk time. The most significant change was the increase in time requesting children to extend their own ideas (from 5.56% to 20.32%).

- T1 dramatically changed the referents of teacher-talk. Initially, 91.97% of talk-time focused on lesson content, 0.01% on the process of co-operation and 6.60% on behaviour. After intervention, only 55.48% of talk-time focused on content, 29.60% on the process of co-operation and 14.91% on behaviour.
- T1 increased her use of linking statements from 7 in 12 minutes (one every 103 seconds), to 25 in 12 minutes (one every 29 seconds).

Changes in child-talk:

- Child-talk time increased from 18.85% to 50.20% of the total talk-time.
- Children extending their own ideas rose from 22.94% to 32.40% of child-talk time. Initially, this was exclusively with the teacher, but developed to involve children (6.82%) and teacher (25.58%). Children increased time extending other children's ideas from 1.05% to 27.27% and reduced time spent extending the teacher's ideas from 35.59% to 6.33%.
- Initially, child-child talk amounted to only 4.99% of child-talk time with 78.95% of this considered negative/off-task. This increased to 49.77% of child-talk time, with 5.50% considered negative/off-task. Across interactions with children and teachers, negative/off-task child-talk reduced from 15.07% to 2.74% of child-talk time.

## **TEACHER 2 (T2)**

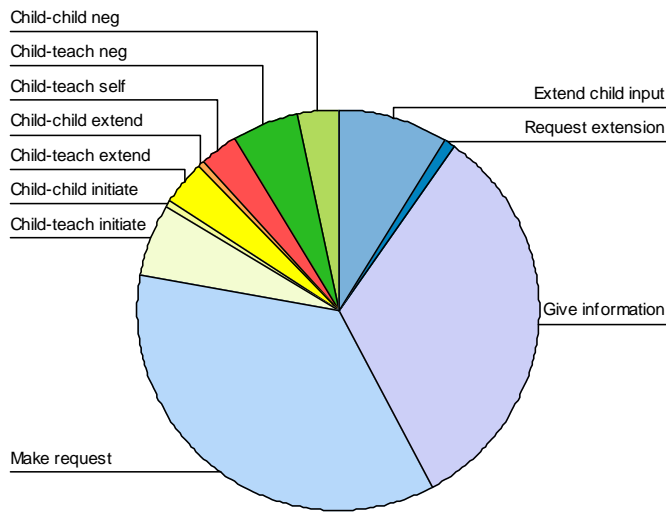
T2 was well prepared for sessions and willing to reflect on her practice. T2 also showed some evidence of phase II in interactions with children and

worked to consolidate this before developing targets in line with phase III (see figure 4.9).

**Figure 4.9:** Pie charts showing the nature of group 2 interactions before and after intervention.

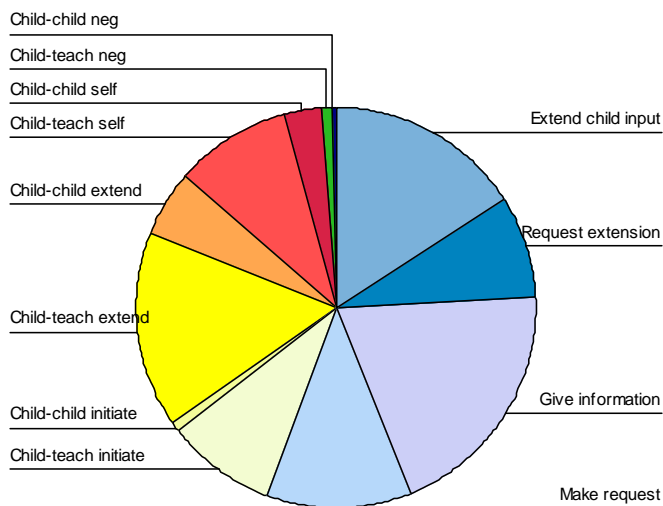
**Before intervention**

*Linking statements = 1*



**After intervention**

*Linking statements = 13*



#### Changes in teacher-talk:

- Teacher-talk decreased from 77.84% to 55.42% of the total talk-time.
- The time spent on the teacher's own ideas fell from 87.39% to 56.63%.  
The teacher increased the time spent extending children's ideas from 11.25% to 28.70% and requesting children to extend their own ideas from 1.37% to 14.66% of talk time.
- T2 significantly decreased the time spent talking about behaviour.
- T2 dramatically increased the number of linking statements made from 1 to 13 (just over 1 per minute of interaction).

#### Changes in child-talk:

- Child-talk time increased from 22.16% to 44.58% of the total talk time.
- Children increased the time spent extending their own ideas from 13.75% to 28.29%. Initially, children extended their own ideas exclusively with the teacher, however, this developed into 21.22% with the teacher and 7.07% with other children. Children increased the time spent extending the ideas of other children (from 2.48% to 11.91%) and the ideas of the teacher (from 15.67% to 35.47%)
- Initially, child-child talk amounted to 20.35% of child-talk time, however, 74.75% of this was negative/off-task. Child-child talk remained relatively constant at 21.30% of child-talk time, however, negative/off-task interactions reduced to only 3.54%. Across interactions negative/off-task child-talk reduced from 41.69% to 2.41% of child-talk time.

#### **TEACHER 3 (T3)**

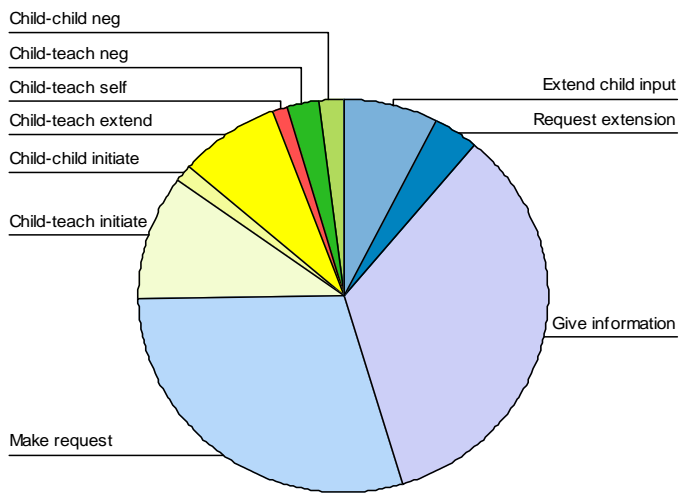
T3 was well prepared for each session, making use of the training manual to record and reflect on ideas. T3 showed evidence of phase I in classroom

interactions, and moved progressively through phases II and III (see figure 4.10).

Figure 4.10: Pie chart showing nature of group 3 interactions before and after intervention.

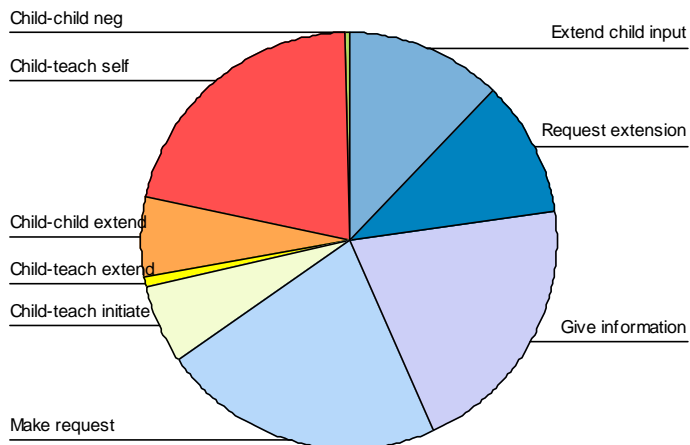
**Before intervention**

*Linking statements = 1*



**After intervention**

*Linking statements = 15*



#### Changes in teacher-talk

- Teacher-talk reduced from 74.85% to 65.24% of the total talk-time.
- Time spent on teacher's ideas reduced from 85.15% to 64.98% of teacher-talk. Time spent extending children's ideas rose from 10.20% to 18.80%, while time spent requesting children to extend their own ideas rose from 4.65% to 16.21% of teacher-talk time.
- There were no significant changes in the referents of teacher-talk.
- The teacher dramatically increased their use of linking statements from 1 to 15 (over 1 per minute of interaction time).

#### Changes in child-talk

- Child-talk time increased from 25.25% to 34.76% of the total talk time.
- The time spent by children extending their own ideas increased from 4.19% to 61.20% of child-talk time. This remained exclusively with the teacher. Children began to extend other children's ideas, accounting for 18.04% of child-talk time after intervention. The time spent by children extending the ideas of the teacher decreased from 31.77% to 2.44%.
- Initially child-child talk amounted to 13.14% of child-talk time, however, 61.18% of this was considered negative/off-task. Child-child talk increased slightly to 19.01% of child-talk time, with only 5.05% considered negative/off-task. Across interactions, negative/off-task child-talk reduced from 18.07% to 0.96% of child-talk time.

#### **TEACHER 4 (T4)**

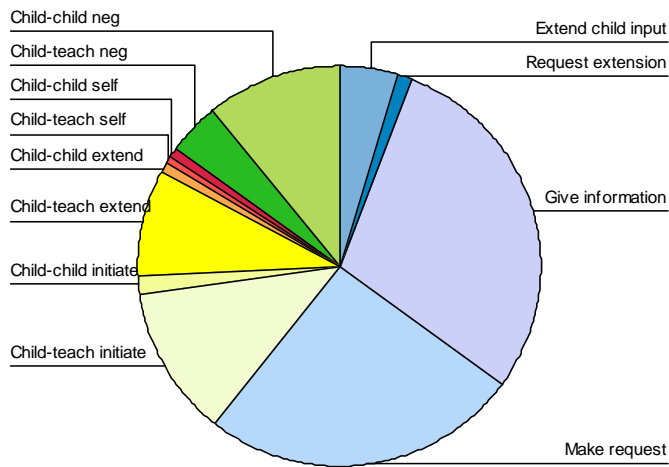
T4 demonstrated less willingness to reflect openly about classroom interactions and did not actively practice targets in daily classroom work. T4 showed evidence of phase I interactions, with high levels of negative child-

child interaction. Targets were negotiated to develop phase II interactions and eventually phase III interactions were targeted (see figure 4.11).

**Figure 4.11:** Pie chart showing nature of group 4 interactions before and after intervention.

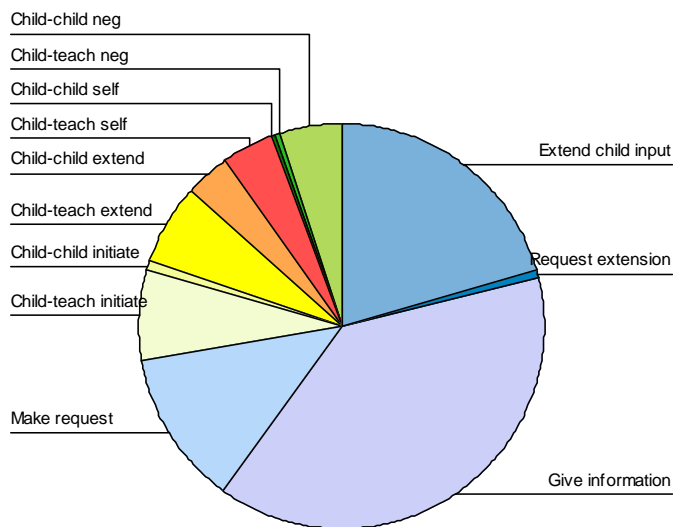
**Before intervention**

*Linking statements = 0*



**After intervention**

*Linking statements = 7*



#### Changes in teacher-talk:

- Teacher-talk increased from 60.46% to 73.49% of the total talk-time.
- Time spent focused on the teacher's ideas fell from 90.22% to 70.66%, while the time spent extending children's ideas increased from 7.89% to 28.46%. The time spent requesting children to extend their own ideas remained minimal.
- The time spent talking about behaviour significantly reduced.
- T4 began to make linking statements, increasing from 1 to 7 statements, amounting to just over 1 every 2 minutes of interaction time.

#### Changes in child-talk:

- Child-talk time decreased from 39.54% to 26.51% of the total talk time.
- Children increased the time extending their own ideas with both the teacher and other children from 3.41% to 16.67% of child-talk time. The time spent extending the ideas of other children increased from 1.83% to 7.81% and extending the ideas of the teacher increased slightly from 21.42% to 24.75%.
- Initially, child-child talk amounted to 34.58% of child-talk time, however, 78.28% of this was considered negative/off-task. Child-child talk increased to 47.31% of child-talk time, with 26.72% considered negative/off-task. Across interactions, negative/off-task child-talk reduced from 38.26% to 14.31% of child-talk time.

#### **TEACHER 5 (T5)**

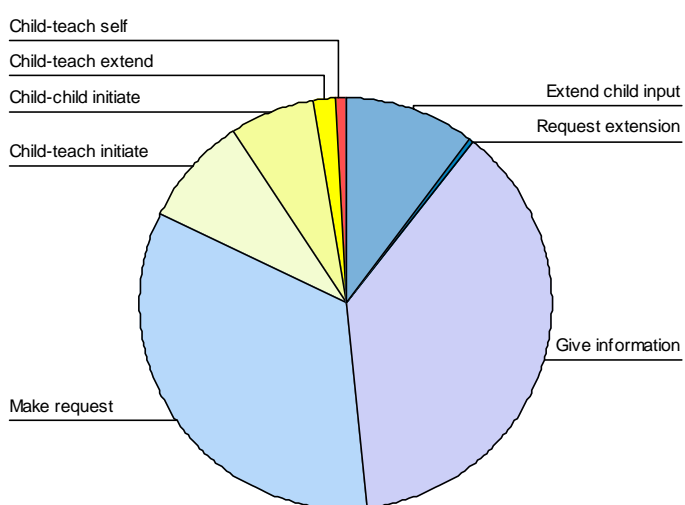
T5 demonstrated difficulty reflecting on practice and was not actively prepared for analysis sessions. T5 showed high levels of phase I interactions

and targets focused on developing phase II interactions. Phase III targets were not addressed (see figure 4.12).

Figure 4.12: Pie chart showing nature of group 5 interactions before and after intervention

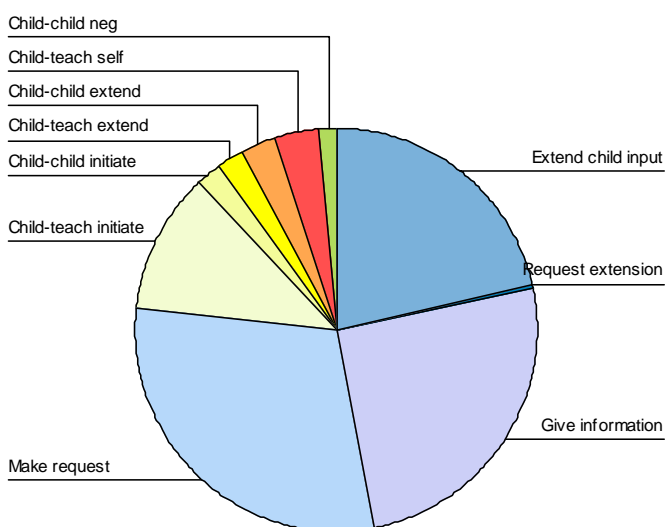
**Before intervention**

*Linking statements = 4*



**After intervention**

*Linking statements = 4*



#### Changes in teacher-talk:

- Teacher-talk reduced from 82.26% to 76.61% of the total talk-time.
- Time spent focused on the teacher's agenda fell from 86.09% to 71.71%.  
The time spent extending children's ideas increased from 12.65% to 27.87% of talk-time while, time spent requesting children to extend their own ideas remained at less than 0.5% of talk-time.
- T5 began to show evidence of talking about the process of co-operation.
- The number of linking statements used did not increase.

#### Changes in child-talk:

- Child-talk time increased from 17.73% to 23.39% of the total talk time.
- Children extending their own ideas increased from 5.03% to 16.45% of child-talk time, although this remained exclusively with teachers. Children began to extend the ideas of other children, amounting to 11.62% of child-talk time after intervention. The time spent by children extending the teacher's ideas remained stable (from 9.51% to 9.41%).
- Initially, child-child talk amounted to 36.77% of child-talk time, with no evidence of negative/off-task interaction. Child-child talk reduced to 25.65% of child-talk time, with 21.15% considered negative/off-task. There were no negative/off-task interactions with teachers before or after intervention.

#### 4.6 Summary of Results

The summary of results displays the main changes in talk-types before and after the intervention (see table 4.2). All themes presented here demonstrate considerable changes in the mean times, however, only those highlighted in blue were statistically significant. The arrows indicate positive correlations between the different themes.

Table 4.2: The summary of results

Teacher-talk	Child-talk
Decreased time talking	Increased time talking
<p>Increased focus on child's ideas</p> <ul style="list-style-type: none"> <li>■ Increase extending ideas</li> <li>■ Increase requesting extension</li> </ul>	<p>Increased time extending own ideas</p> <ul style="list-style-type: none"> <li>■ With teacher</li> <li>■ With other children</li> </ul>
<p>Decreased focus on own ideas</p> <ul style="list-style-type: none"> <li>■ Decreased making requests</li> <li>■ Decreased giving information</li> </ul>	<p>Increased time extending the ideas of other children</p>
<p>Changed nature of talk</p> <ul style="list-style-type: none"> <li>■ Decreased content time</li> <li>■ Increased co-operation time</li> <li>■ Decreased behaviour time</li> </ul>	<p>Increase in child-child talk</p>
<p>Increased use of linking statements</p> <ul style="list-style-type: none"> <li>■ Pass from child A to child B</li> <li>■ Pass from child A to group</li> <li>■ Link children's ideas</li> </ul>	<p>Decrease in interactions</p> <ul style="list-style-type: none"> <li>■ With teacher</li> <li>■ With children</li> </ul>

#### 4.7 Developing ideas about the role of interactions

Teachers answered the following question before and after intervention, 'What are the most important factors in positive interactions with children?'. Responses evolved over the intervention, developing a more interactive focus (see table 4.3). Presented here is a comparison of responses.

Table 4.3: Perceptions of effective interactions before and after intervention

<b>BEFORE INTERVENTION</b>		
<b>One-sided responses</b>	<b>Semi-interactive</b>	<b>Interactive</b>
Fairness/Praise	Look from child's point of view	
Respect and trust	Talk at their level	
Empathy/keep calm	Listen to point of view	
Pay attention	Let them know they are listened to	
Respect needs		
Past positive interactions		
Genuine interest		
<b>AFTER INTERVENTION</b>		
<b>One-sided</b>	<b>Semi-interactive</b>	<b>Interactive</b>
Show genuine interest	Accept children at where they are at	Active listening and feedback based on what is said
Recognise positives	Work at the child's level	Be responsive to children
Be positive	Value their contribution	Listen to each other i.e. you listen to child and child listens to you
Eye contact	Allow children to express themselves	Take turns to create rhythm
Acknowledge children	Give space and time for children to communicate	
Engender trust		
Attentiveness		
Use body language to elicit interest/intention		
Smile & be yourself		
Consistent messages		

#### 4.8 Results of personal evaluations

Teachers reported on how they felt the training had helped them develop their practice. Responses were recorded through ongoing discussions and through the final evaluation questionnaire. All staff expressed that the training had helped them develop their interactions with children. Responses highlight the nature of that perceived development.

**Regarding aim 1:** developing the two-way interaction of ideas

- *Now I focus on building on children's ideas to involve them in their own learning.*
- *I use scaffolding to bring children into discussions and take them a step further in their understanding.*
- *I've developed awareness of the importance of allowing children ownership over their learning process.*
- *I use scaffolding across both learning and discipline scenarios so that children are involved more in all aspects of classroom interactions.*
- *It has made me consider my role in teaching and when I should stand back and let children take more control.*

**Regarding aim 2:** supporting co-operation between children

- *I now look for more opportunities to allow children to help each other. I can help them to help each other.*
- *I've developed ways to support the interactions between children, cause they often don't manage by themselves.*

**Other:** *Now I bring myself as a person into the interaction, rather than as a teacher.*

## Chapter 5

### Discussion

The discussion firstly considers the limitations of the study to ensure results are interpreted appropriately. Following this, the results are considered in relation to the research questions and in relation to wider implications for education, namely the effective inclusion of children in the classroom and the interaction of the teacher, child and curriculum. Specific attention is paid to the role of the educational psychology in supporting developments in co-operation and interaction within the educational system.

#### 5.1 Limitations of the study

The methodology employed in the study is considered below, with particular reference made to conclusions made within a constructivist paradigm, limitations in the scope of the data analysed, designing research within a school development system and the dynamics of video analysis sessions.

##### 5.1.1 Conclusions within the constructivist paradigm

Within the constructivist paradigm, it is proposed that developments such as changes in behaviour or beliefs occur out of a new construction of reality (Robson, 2002). The flexible research design based on an ongoing process of needs analysis and design stages, allowed for the development of the shared construction of meaning and understanding between the author and the teachers. The intervention was thus constructed over a process of interaction

between the author, the participants and the context. The integral involvement of the school in the development of the intervention may be a key variable in the school demonstrating such a strong commitment, and indeed in the positive outcomes. However, there remain implications for the interpretation of results regarding what effected behavioural change.

In attempting to replicate the intervention within a school, it must not be assumed that merely introducing video analysis sessions will result in measurable changes in teacher practice. The teachers experienced positive self-modelling (Dowrick, 1999) through video analysis, engaged in focused dialogue regarding interactions, developed a shared language of reflection, engaged in reflection and preparation within the classroom, and were part of a group of committed teachers focused on developing practice. The research design restricted measures of change to before and after intervention. The process of how that change developed was not fully explored. For example, teachers were initially anxious and unfamiliar with the use of video cameras in the classroom, however, they became skilled and relaxed over the intervention process. Their perception of the task may have altered not only the quality of the video produced but their recorded behaviour.

Lindsay (2003) argued that 'mixed method' approaches must be advocated to facilitate triangulation of information across contexts, the effects of interventions and practices and what they mean to the participants. Change within a constructivist paradigm must be explored as well as measured across the whole context of intervention to contextualise changes in behaviour, and to consider how training might be optimally developed in future opportunities.

Observations of teacher-child interactions were conducted collaboratively by the author and the teachers, thus constructing shared meaning and interpretation together. Robson (2002) argues that conceptualising themes from real world data leads to more ecologically valid results than pre-constructing categories. The analysis of pre and post intervention videos, were conducted in isolation, without additional, contextual information. Although inter and intra-rater reliability were achieved adequately, there remain concerns that the range of behaviour associated with codes may have evolved over the duration of coding. At each stage of coding, codes were explained within the understanding or construction held at that time of coding. Thus the reliability process evolves with the coding process and may be susceptible to shifts in coding. To eliminate this and achieve construct validity in line with reliability measures, intra-rater reliability measures may have been carried out more regularly, and participant teachers who were part of the initial coding but not part of the coding process may have also been involved.

### **5.1.2 Limitations in the scope of the data analysed**

The study was conducted with a small population of children and teachers at a residential school for children with SEBD. Frederickson & Cline (2000) recognise that it can not be assumed that variables such as child-teacher interaction, or intervention approaches, will have equal salience for different groups of children in different contexts. The results must not be assumed to be generalisable to other classrooms. Rogoff (1990) presents interaction as the process of transmission of the intellectual tools and skills of a particular culture, therefore the particular culture within which the child exists must be

considered. A residential school for children represents its own cultural community and may demand more or less directive instruction than other primary school environments.

This research focused on verbal communication by studying interactions through conversational analysis, rather than the wider context of interaction, including movement, expression, gesture and other non-verbal communications. This may have omitted instances of interaction where the teacher might initiate response through a look, or share the attention between children through using gesture. Video analysis sessions focused on the wider context of interaction and thus it may be assumed that developments in teacher practice also spanned such a context. With regards to the interpretation of results, two issues must be acknowledged. Firstly, the measure of a teacher establishing two-way interaction or supports co-operation between children is not a complete measure and may misrepresent the amount of development by a teacher if it is assumed to be a complete measure. Secondly, changes in child interaction must be considered in light of this. Children may have evolved in their interactions in relation to the whole context of interaction by the teacher, and not just the changes in verbal communication. Further research may be required to investigate the degree of correlation between non-verbal and verbal communication.

There is no information regarding educational outcomes for children involved in learning environments incorporating these two principles of teacher practice. It has been assumed, based on literature, that the interactive, co-operative learning environment encourages more effective learning. However, the only measure of this obtained within this study is that children

were actively engaged in the classroom discussion activities. Before conclusions are drawn regarding the effectiveness of an approach for learning, progress must be followed through to educational outcomes, although the compatibility of such a learning process with the current curriculum and assessment protocols must also be considered. Also, following child-child interactions into unsupervised environments may give insights into the learning and transfer of co-operative skills.

### **5.1.3 Operational issues in working with video**

This study demonstrated the use of video as an effective tool for development where reflection on practice is made instantly accessible, even in conditions where the teacher initially presents as stressed and distracted. The video by its very nature presents a scenario of person-person-object interaction comprising secondary intersubjectivity (Trevarthen, 1979). This co-operation facilitates effective interaction through discussion, reflection and turn taking with a shared object of attention. Using video as a development tool brings high ecological validity as the very practice to be developed is the basis of enquiry. Evidence-based discussion was facilitated from what was observed and effective interactions and approximations towards desired behaviours demonstrated on the video were positively reinforced (see Dowrick, 1999). Such practice incorporates the idea that learning begins from where the individual is at (Bruner, 1966), leading to more effective learning.

This demands two basic needs from the teacher and guider. Firstly, that the teacher is willing to focus and reflect on the contextualised processes of the interaction, rather than the content of discussion. If the teacher does not

demonstrate this, the guider must have skill in receiving the teacher's position while helping to move their thinking on to the interactive processes. Secondly, the video must provide some evidence of a particular behaviour. For teachers demonstrating partial skills in targeted areas, the video was particularly effective in providing concrete examples from their practice. However, a teacher might demonstrate no evidence of skill in targeted areas, for example, in extending a child's answer. This required the author to firstly consider a staged process of skill acquisition, to try to build up skills from where the teacher was at. If no target skills were demonstrated, perhaps the target skills are not appropriate for that teacher, or at least they need to be broken down further. Secondly, the author used solution focused questioning methods (see eg. Ajmal & Rhodes, 1995) to try to elicit what the teacher might have done differently. However, this removes the discussion away from the content on the video and creates a less evidence-based discussion.

Two issues may have further enhanced the ease and success of the intervention for teachers and increased the validity of measures for research. Preparatory work by teachers was not always carried out as requested. Teachers were requested to prepare video clips prior to analysis sessions by pre-selecting interactive sequences. The initial meetings with education management might have negotiated scheduled time for teachers for such preparatory work. Secondly, to achieve consistency across the intervention programme, conditions under which videos should be taken were detailed. These conditions were not consistently adhered to leading to variation in the quality and focus of the tapes. In creating conditions within which to conduct real world research, it may be more successful to elicit conditions of operations from the participants working within the context, rather than

imposing them from ideas concerning only the research. Conditions may therefore be more meaningful and motivating to participants. Additionally, initial training in the use of unfamiliar technology, such as video cameras, may ensure valuable data is obtained from the beginning and comparisons can be conducted without additional variance.

## **5.2 Re-addressing the research questions in light of results**

Discussion is structured according to the original aims of the study, relating to the two-way interaction of ideas in the classroom and the support of interactions between children, while addressing the research questions. General trends in the data are explored here with regards to both significant and non-significant results, where a considerable change in mean talk-time was documented. The aim is to identify and explore patterns of change in interactional styles as well as those that may be more significant given a larger sample of participants.

The results support the earlier premise that the conditions of effective learning through interaction, do not necessarily occur simply as a result of shared tasks, rather through the development of effective interactional styles (Mercer, 2000; Rojas-Drummond & Mercer, 2003). Hastings (1992) argued that teachers can make changes in their interactional styles, without changing the amount of interaction they are involved in. In most cases, the amount of teacher interaction reduced and child interaction increased, however not significantly. The more significant changes were documented in the nature of interactions, thus supporting Hasting's argument. The change in the nature of teacher interactions allowed the teacher and children to engage in joint activity where ideas were developed collaboratively, through

two-way interaction. By developing the interactional style of the teacher therefore, children engaged more in the interactive learning process with the teacher and other children and the way meaning was constructed within the group evolved. In developing the interactive processes, children may experience different kinds of learning (Mercer, 2000).

Matusov (2001) proposed that to achieve intersubjectivity in the classroom, teachers should share rather than dominate the enterprise of learning and let children take some responsibility for their learning. Teachers reduced the time spent discussing and explaining their own agenda and talking about lesson content. The changes in teacher interaction may indicate the changing perception of the teacher from expert and deliverer of knowledge, to a facilitator of learning, there to engage with the children in the community of enquiry and to support the interaction and co-operation within the classroom.

Matusov (2001) argues that delivering a curriculum results in the one-way transmission of ideas. Reducing the focus on teacher's agenda also reduces the opportunity to deliver a pre-determined curriculum as the direction of learning may be driven by the construction of ideas within the group of children. As a result, a more child-centred rather than curriculum-centred education system may evolve. This has additional benefits in that children are not distracted by performance and attainment. Maclean (2003) suggests that performance-driven learning can create performance oriented learners, who are more likely to disengage if the learning process becomes more difficult. In these interactive sequences there was no focus on performance. The focus remained on the development of ideas within the current time and

the focus was shared by both teacher and children. Children engaged in cumulative rather than disputational or off-task interactions together, exploring and extending their understanding. However, learning can no longer be guided by pre-determined learning outcomes unless these outcomes refer to the process of engagement in learning.

Teacher interaction focused more on eliciting children's ideas, allowing the teacher to become more attuned to the child's understanding. This presents learning as a shared enterprise between children and teachers where the focus of the teacher is on meaning from the child's point of view. Shumow (1998) suggests that if teachers gain insight into how children represent information and approach problems, they may be better equipped to consider how children's ongoing learning might be scaffolded. When teachers extended the ideas of children they related directly to the child's understanding. Teacher's also requested children to extend their own ideas, developing a more exploratory type of conversation where children's ideas are extended and challenged and the reasoning explored (Mercer, 2000). The correlations between the teacher focusing on children's ideas and children extending their own ideas, highlights the strong impact the teacher has on the nature of child-centred learning in the classroom. Children considerably increased the time spent extending their own ideas, rather than exclusively extending the ideas of the teacher. Consequently, the meaning constructed in the classroom is not the result of direct instruction from the teacher, but a shared negotiation and construction of meaning through the collective inputs of participants.

Teachers increased the time spent focusing on the interactive and communicative practices within the classroom through focusing on the 'process of co-operation'. Such changes had not been the focus of video analysis sessions and target setting and may have evolved as a by-product of other changes in interactional style. Mercer (2000) described the importance of meta-awareness of the dialogic processes that go on in the classroom and the implications of those processes for learning. The more children are explicitly aware of the processes, he argues, the more they will actively engage in effective learning through them. The high levels of children extending ideas and the low levels of negative and off-task interaction, suggests that children were engaging effectively in the interactions.

Matusov (2001) proposed that to support intersubjectivity within the classroom, the teacher should coordinate the inputs of children. Teachers did this by significantly increasing the number of linking statements they made between children's inputs. This may have provided scaffolding for children to take turns appropriately, recognise links between ideas and to recognise the co-construction of ideas between group members. It was suggested that co-operative learning stimulates natural sources of peer support and encouragement (Greenwood, Carta & Kamps, 1990). Group processes may have been consolidated through such recognition of links between the children. There were considerable increases in child-child interaction. This changed the dynamics of classroom interaction as prior to intervention, interactions were mostly channelled through the teacher, and children would typically compete for the individualised attention of the teacher. Children were beginning to extend the ideas of other children with the co-operative support from the teacher and to extend their own ideas with other children.

For this latter process to occur, at least three turns must be taken between children, as a child introduces an idea, to which a child responds or extends, to which the original child extends it further based on the added contribution of the second child. Thus, children were engaging in cumulative interaction with the teacher and other children, where they responded to feedback and constructed their subsequent input on that basis (see Mercer, 2000). The teacher provided scaffolding for the dialogue through co-operative support, rather than scaffolding the development of the ideas.

Corrie (2002) suggested that discipline may present difficulties for teachers working in a more child-centred, co-operative learning environment with children. In one group, this was the case. With no initial evidence of negative/off-task interactions there was an increase in such interactions with other children. The teacher had progressed in developing the two-way interaction of ideas (phase II), however, she had not begun developing skills in supporting the interactions between children (phase III). It is proposed that children need scaffolding to engage with their own and each others ideas effectively. This additional teacher skill may be omitted from studies investigating the effectiveness of child-centred learning, resulting in discipline issues. Prior to intervention, most teachers spent time talking about behaviour in response to behaviour incidents, with high levels of negative/off-task interactions recorded. Negative and off-task talk between children was correlated with other child-talk, suggesting that any interaction between children was likely to be of this kind. In such an environment, teachers might prefer to reduce opportunity for interaction between children. However, as teacher interaction became more child-centred and focused on interaction, the amount of interaction considered negative and off-task by

children in most groups dramatically reduced. This supports the earlier premise that learning and behaviour must be considered as integral components of the classroom environment and not as attributes of the child (Corrie, 2002).

## **5.2 Wider implications for Education**

The study highlights the importance of the teacher's role in supporting the critical process of learning through interaction. By developing the interactive role of the teacher within the group of children, the nature of interaction amongst the children and their engagement in the learning process significantly changed. This has considerable implications for the inclusion of children within the classroom community and for the interaction between the teacher, the curriculum and learning theory.

### **5.3.1 The inclusion of children within the classroom**

The definition and diagnosis of SEBD was described as being likely to vary according to contextual variables, particularly the behaviour, attitude, expectations and skills of the teacher (Department for education, 1994). How might that learning context be developed to effectively include such a child within the learning process? Cross & Walker-Knight (1997) described the following,

*"inclusive settings must emphasise building a community in which everyone belongs and is accepted and supported by his or her peers and other members of that community while his or her educational needs are being met" (p.269-270).*

From the results of this study, it seems the separation of these two ideas of 'being part of a community' and 'meeting educational needs' may be unwarranted, as the educational needs may be closely related to children being effectively involved in the interactive learning environment. The process of educational needs being met is typically addressed by focusing on the child's access to a curriculum. The need for planning by the local authority, for children with disabilities to access the learning environment, has been documented within the Accessibility Strategy (Scottish Executive, 2002). Within the document it is suggested that local authorities link their accessibility strategy with their behaviour support initiatives to support children with social, emotional and behavioural difficulties. Access to learning, however, must also address the child's ability to participate in the learning environment. Interaction within social, collective processes for Vygotsky (1978) represents the basis for thinking which may be the ultimate facility to ensure educational needs are met. Children considered SEBD may need more support in engaging in and sustaining the co-operative relations within the classroom. For example, if inclusion within the community of enquiry within the classroom may be measured conversationally within the classroom discourse, then this intervention may be considered to have successfully increased inclusion. Educational needs and accessibility of learning, may be more appropriately defined through access to interaction within the classroom.

### **5.3.2 The interaction between teacher, child and curriculum**

Bruner (1966) describes education as an evolutionary instrument where the child develops awareness and understanding of the tools of the culture.

However, in the curriculum, tools are typically defined in terms of content and products, rather than processes of learning. The processes of learning themselves, however, may in fact constitute cultural tools. This extends the responsibility of the teacher to develop the interactive processes of learning for all children within the class if the goal of effective learning is to be achieved.

The design of an education system, however, may determine the role of teachers and the nature of learning that occurs. The skills developed by the teachers in this study were reported to represent a new approach to thinking about teaching and learning in the classroom. This is consistent with Pianta (1999), who proposed that teachers are taught to recognise development within children's zones of proximal development (see Vygotsky, 1978) within the cognitive domain, but not in the domain of psycho-social development. Such training may be representative of a curriculum-centred education system as the teacher can recognise cognitive development in line with curricular progress. This report suggests, however, that effective learning and cognitive development occurs through psycho-social interaction (eg. Trevarthen, 1979, 2002). It follows that it is the teacher's role to recognise and scaffold development within this domain. Teacher training and continuing professional development might benefit from focusing on the interactive and psycho-social processes of child learning, rather than the skills of teaching. It must be recognised that most teachers have experienced and trained in instructional methods of teaching (Matusov, 2001) and supported reflection on teaching practice, such as that conducted in this study, may be a useful process in the development of new skills.

However, the national curriculum determines progression through learning based on performance. How can a national, predictable and prescriptive curriculum, spanning a breadth of knowledge, be implemented across schools as well as a desire for learner-centred learning? Focusing on the processes of learning does not necessarily mean abandoning a core curriculum. The interactive instructional processes may be incorporated into the breadth of material presented to teachers as a guide, allowing for learning to be constructed upon a combination of child-led and teacher-led learning activities. Learning indicators may focus on the skills of learning rather than the content of learning and educational outcomes may be based on interactive processes. In developing curricular activities, the teacher's perception of the learning process, may be a key variable in the success and nature of learning that takes place. Appealing to Mercer (2000), teachers may be continually asked the following questions: how are you scaffolding children's learning and what kind of learning are you encouraging through your interactions?

#### **5.4 Implications for the role of Educational Psychology**

This study demonstrated the increase in engagement and reduction of negative/off-task talk by children through a change in the interactional style of the teacher. No direct involvement with children was undertaken. This study supports the role of the educational psychologist as an analyst of systems and highlights the importance of the context in determining the learning experience of the child. Typically, educational psychologists respond to a referral system based on a child-deficit model, with an expectation that they will carry out an assessment of the child. However, if the educational psychologist works from a contextualised rather than individualised

perspective of children, they may explore the '*social interactional fabric*' within which children exist (Reid, 1993; p.420) and identify barriers within the learning environment. It is proposed that educational psychologists must support the development of appropriate systems that determine their involvement in the education processes in the school in order to carry out their role most effectively.

The role of educational psychology is constructed upon co-operation and collaboration with schools, teachers, local authority agencies and families. The principles of learning through interaction must be at the very centre of reflection and skill development. This section explores the constructivist and co-operative principles from this study in relation to the role.

#### **5.4.1 Constructivist framework for approaches to work**

This study has indicated that the nature of interactions it seems can impact on the nature of learning and development that occurs. It is argued that to work effectively the educational psychologist requires to establish two-way interaction and shared learning processes in both consultations and development work with children, teachers and organisations. However, it is also argued that within a constructivist paradigm, the educational psychologist should triangulate information with an appropriate evidence base.

Ainscow (2003) suggests that schools typically have more knowledge and expertise than they use, and development work should focus on finding better ways of using that creativity, skill and knowledge. The educational psychologist's role in consultations with the teacher may be to facilitate

development by helping the teacher become aware of skills and how they might be extended in context. This demands creativity on the part of the educational psychologist in finding ways to construct meaning co-operatively with colleagues, such as discussion groups, consultations, the use of pictorial recording mechanisms, or video. In this study, the educational psychologist attempted to embed the intervention in the very nature of the perceptions and meaning of the participants by focusing on the two-way interaction of ideas, throughout the consultation and intervention process. This elicited four main benefits:

- The construction of understanding and intentions was shared between the researcher and the teachers.
- Participants were integrally involved in entire development process.
- The research was embedded within the context of the school.
- The resource of knowledge and experience that existed already was utilised and developed.

Bruner (1966) proposed that involving children in their own learning, empowers the child into becoming their own self-corrector and thus an independent learner. However, this principle may be a more general goal within the learning community. Teachers are often given no further support after initial training and thus become their own self-correctors of teaching practice without further direction. The educational psychologist might support the school in developing learning mechanisms to empower teachers and staff in developing and evaluating targets and to manage their own development within an accountable process.

The same principles should also guide the development of research within schools to allow for the development of a relevant, and useful evidence base to be developed. Through using the principle of two-way interaction of ideas, research develops out of and with the context within which it is constructed. However, the purpose of research within a constructivist approach to working, must be re-considered. The reality within each classroom, may be constructed in relation to its own particular context (see Robson, 2002). Variables are not controlled for and isolated but rather recognised as integral components of classroom operations.

Research must be documented as a process of development. An evidence base therefore allows for documenting the processes of change within an intervention across all aspects of perception and behaviour thus tracking the development of the new construction of reality. An evidence base for practice may be developed within schools which may be a valuable resource for decision making and the ongoing development of and design of systems, while still recognising the individually driven construction process of meaning within that particular context. Can an evidence base be constructed and utilised across contexts however? By documenting processes of development that incorporate how the context and the intervention evolved and interacted together, principles of development may be derived. Such work may provide insights into how realities are constructed and the most effective ways to implement change and development. It is proposed that this study may be replicated providing the interactive needs analysis and design process within the methodology is conducted appropriately within the context of the new school. The educational psychologist therefore may support the interaction

of evidence from pupils, teachers, agencies and schools as well as from literature.

#### **5.4.2 Shared learning within and between organisations**

The benefits of interactive learning through supported co-operation have been addressed throughout this study. However, thought has remained at the level of the individual classroom. The same learning principles, however, may pervade all levels of the learning community, where the shared construction of meaning and co-operation may lead to more effective processes and outcomes. This section considers the role of the educational psychologist in supporting the process of co-operation between different members of the learning community.

The educational psychologist works across levels of the local authority education system and enjoys a wide perspective of operations across schools and how the local authority vision may be developed and implemented. The educational psychologist may also have an integral role in developing the conceptual framework and vision within schools as well as the systems of implementation. The educational psychologist may therefore support and facilitate the co-operation between different bodies within the education system, within and between schools, to ensure principles and operational methods are shared. Allan (2003) states that to address the barriers to inclusion professional development must enable teachers to participate in professional learning communities within their schools. This principle may be extended to between schools. For example, the Salamanca statement (UNESCO, 1994) presents the idea that within an inclusive system, special schools may function as a training and resource centre for staff from

mainstream schools. Investment in special schools, should be undertaken in light of their

*“new and expanded role of providing professional support to regular schools in meeting special educational needs” (p.12-3).*

Working collaboratively with staff may provide an insight into ways of including children from, for example, residential schools into mainstream. Developing systems that stimulate collaboration and allow members of the learning community to engage in exploratory talk together may allow for appropriate solutions to evolve within context. The educational psychologist may have an integral role in developing and supporting co-operative learning systems within and between educational establishments.

### **5.5 Implications for Future Research**

The nature of teacher-talk may engage children in particular kinds of learning and this relationship must be further explored. This study involved two main identifiable changes in teacher talk, increasing the two-way interaction between teacher and children, and supporting the co-operation between children, that were associated with increased cumulative child interaction in the classroom. Further research focusing on the development of teacher-talk along only one of these dimensions may give further insights into the relationships of teacher-talk and child interaction. The study did not differentiate between cumulative and exploratory interaction between children, however, such a distinction may be helpful in developing effective interactive learning processes. Exploring further the nature of talk within the context of interaction may also provide insight into whether talk-types may be usefully studied in isolation from non-verbal sources of interaction.

The development of the interactive skills of teachers and children across contexts may be investigated, as well as methods to stimulate and enhance generalisability. This may apply to children involved in interactive learning environments such as the playground, and to teachers involved in interactions with other teachers, parents etc.

The results of the study are not assumed to be generalisable as the study evolved within the specific context of the school. However, replication of the study using the interactive methodology may allow further development of and insight into such a process within the mainstream environment. Replication of the study within a mainstream school, with bigger class sizes and a wider range of children will also provide insight into how the interactive learning processes may support all children's learning. It was earlier discussed how the inclusion of children within the classroom may be achieved through interactive processes and this might be further explored to consider tangible and measurable insights into what inclusion looks like for children. Furthermore, extending the project to the community and replicating the study within homes may allow comparison of the nature of talk-types used by parents with children and what strategies might be introduced to develop this.

Longitudinal studies would allow for investigating the long term nature of change, with regards to both teacher talk-types and child co-operation and explore what measures might consolidate development over time. The Scottish Executive's bid to improve attainment (2001b), and behaviour (2001c), focuses on enriching learning processes to improve educational

outcomes. However, the integration of factors within the education system must be rigorously researched to ensure they are compatible to allow educational outcomes to improve for all children. If the learning process is improved for children, do the curricular and assessment demands allow for educational outcomes to demonstrate improvements in learning? What kind of learning does the curriculum assess and is this compatible with the kind of learning explored in this study?

Further research on training methods may provide useful information on how to incorporate such development into initial teacher training strategies and ongoing professional development. Embedding reflection of practice into the development mechanisms within a school may be the most effective means, however, further research into systemic learning and development mechanisms may provide further insight into how this can be achieved most effectively.

## Chapter 6

### Summary and Conclusions

Current learning theory suggests that social interactive processes within the classroom may indeed represent the vital process through which learning occurs. The design and nature of classroom interaction may impact on the engagement of children within the learning process and the nature of learning that occurs (Mercer, 2000). This study used the concept of intersubjectivity (Trevarthen, 1979; Matusov, 2001) to guide the development classroom interaction, based on the ideas of joint activity, shared understanding and the co-construction of ideas. Intervention focused exclusively on developing the role of the teacher which presented two main challenges. Firstly, teachers aimed to involve children within their own learning through achieving the two way interaction of ideas in the classroom. Secondly, teachers aimed to support the interactions between children to allow them to construct meaning together.

In the study, teachers created a more interactive and child-centred learning environment through changing the nature of their interactions with children. More specifically, teachers increased time spent focused on extending children's ideas and decreased time spent focused on their own ideas. Teachers changed the referents of their conversation, reducing time spent talking about the lesson content and behaviour and increasing the time spent talking about the process of co-operation. Finally, teachers increased the number of linking statements made between the ideas presented by children, thus supporting the co-operation and co-construction of meaning between

children. Such development in teacher practice suggests a change in the perceived role of the adult as a guider and facilitator in the development of ideas, rather than the transmitter of pre-constructed knowledge. Children dramatically increased the time they spent engaged in the learning process, extending their own ideas and those of other children. There was a substantial increase in the amount of interaction between children with a reduction in the amount of negative or off-task interaction by children. The learning experience achieved in the five classrooms suggests one where children are involved and motivated to share and construct meaning and understanding together.

Teachers have a crucial role in supporting the interactions within their classroom, not merely to support the socialisation experience of children, but to support the very process of learning. The design of an education system, however, may determine the role of teachers and the nature of learning experienced by children. An education system that focuses on the processes that support learning, rather than the products of schooling (Trevarthen, 2002) may bring greater engagement in the learning process, and better outcomes for children. Educational outcomes may depend on the nature of the assessment tool, thus a curriculum is required that nurtures and values the processes of learning. Teachers training and professional development may focus on a key skill in creating and supporting an effective, interactive learning environment.

The processes of two-way interaction and supporting co-operation may be processes common to any effective learning system. The educational psychologist may embrace these principles in working within and across

school systems to ensure work is embedded within and evolves from the context within which it applies and to ensure appropriate participation within the development processes. There may be no greater development tool than the sharing of good practice within the same context and practices may be shared and explored across the learning community. Establishing the principles of two-way interaction and supported co-operation as learning mechanisms, may allow this to be achieved.

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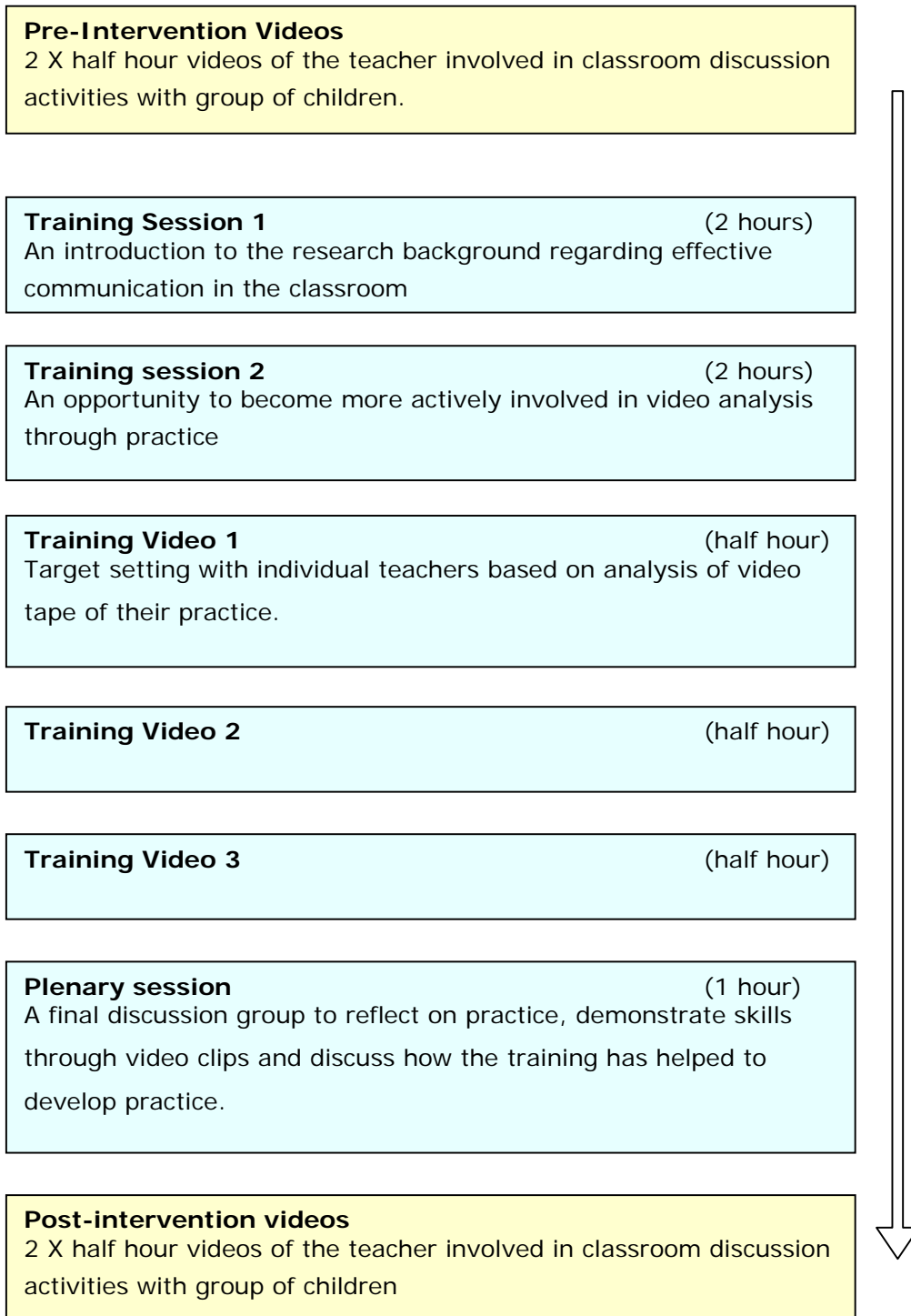
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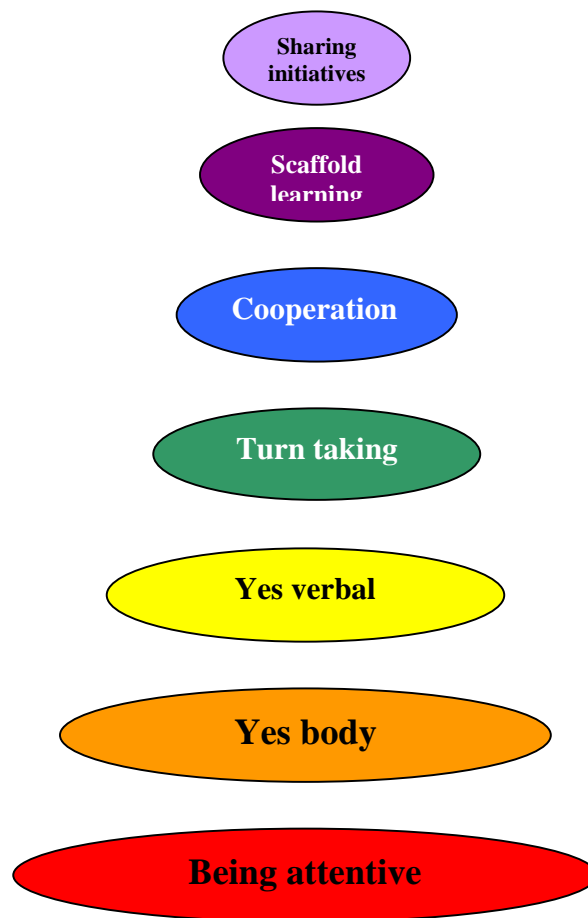
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**Appendix 1: Diagram of the intervention and research design**

Appendix 2a: Training booklet for Training session 1

# **Working for Effective Interactions with Children:**

An Introductory session



Training Session 23<sup>rd</sup> January, 2004

Kirsty Brown & Hilary Kennedy  
University of Dundee

## Aims of the session

### WHY?

Communication and interaction:  
why is it so important in working with  
children?

### WHAT?

The theory of intersubjectivity  
Theories of co-operative learning

### HOW?

Some practical ideas for the classroom

## Programme

1. Activity: What do children need?
2. Resilience – risk and protective factors
3. Basic intersubjectivity: the theory of social interaction

### *Quick break*

4. Communication: Yes cycles and No cycles
5. The Contact Principles
6. Naming as a tool for practice
7. Identifying the contact principles in practice

## What do Children need?

Children's needs are often categorised on three levels (Maslow, 1971).

- Firstly, children need shelter, food and basic care.
- Secondly, children need interaction, communication and relationships.
- Thirdly, children need guidance and direction.

Why do some children cope in the absence of fulfilment of these basic needs? Garmezy (1993) suggests the hidden variable is resilience. He defines resilience as 'normal development in the face of adversity' and considers resilience to be the result of an interaction between risk factors and protective factors in children's lives. Many children face considerable risk factors. As practitioners working with these children, we may seek to foster resilience through increasing the protective factors? Research suggests this may be achieved through focusing on our interactions with children.

## The Importance of Relationships and Interactions

Vygotsky (eg. 1962) states that mental activity begins with interaction, which take the form of social contacts and exchanges between people. The child's ongoing social, emotional and cognitive development is constructed out of social experiences. What children learn to do in co-operation with others, they will eventually learn to do alone.

In the 1970s, Trevarthen studied interactions between mothers and babies. Through analyzing interactions in minute detail, he asserted that newborn babies have natural desires and skills in interaction. When the mother's reactions were not 'attuned' to that of the babies, he found that the baby became distressed and a negative cycle of interaction evolved. With attunement between mother



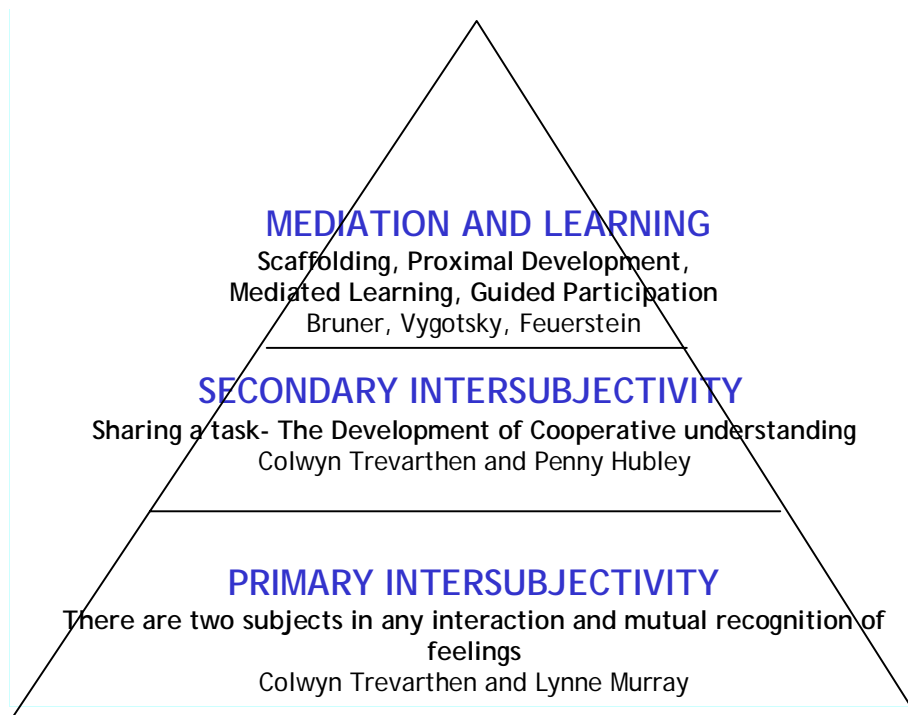
Professor Trevarthen

## The Theoretical Core : Intersubjectivity

The attunement between mother and baby is known as PRIMARY INTERSUBJECTIVITY. Primary intersubjectivity refers to micro details of the interaction between the mother and baby such as giving attention, and smiling. As the baby develops their interactions become more complex, involving the environment and more verbal communicative methods.

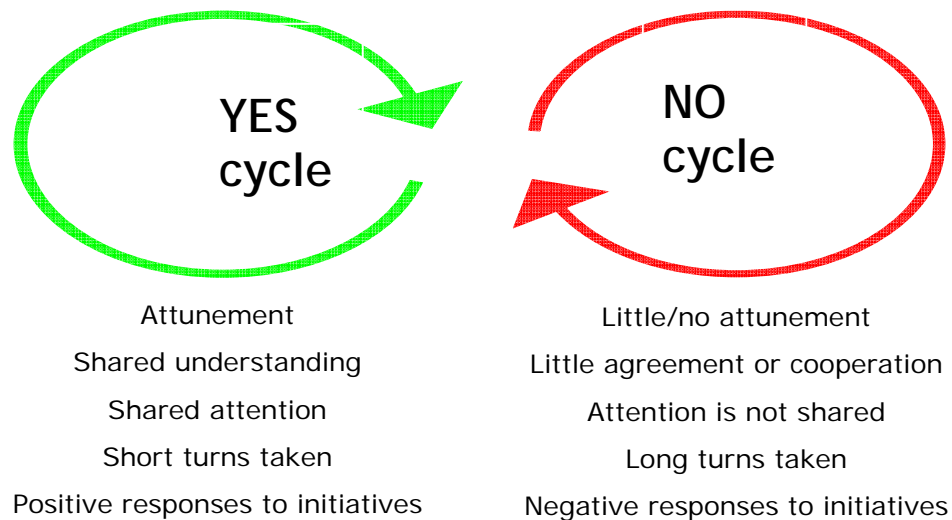
SECONDARY INTERSUBJECTIVITY then develops involving co-operation between the mother and child, and represents the ability to share a task. Once a shared understanding is reached the adult may engage in mediating and scaffolding the learning experience with the child.

MEDIATION AND ACTIVE LEARNING represent higher order levels of interaction involving teaching, learning and guiding a child.



## The Communication Cycle: Positive Cycles and Conflicts

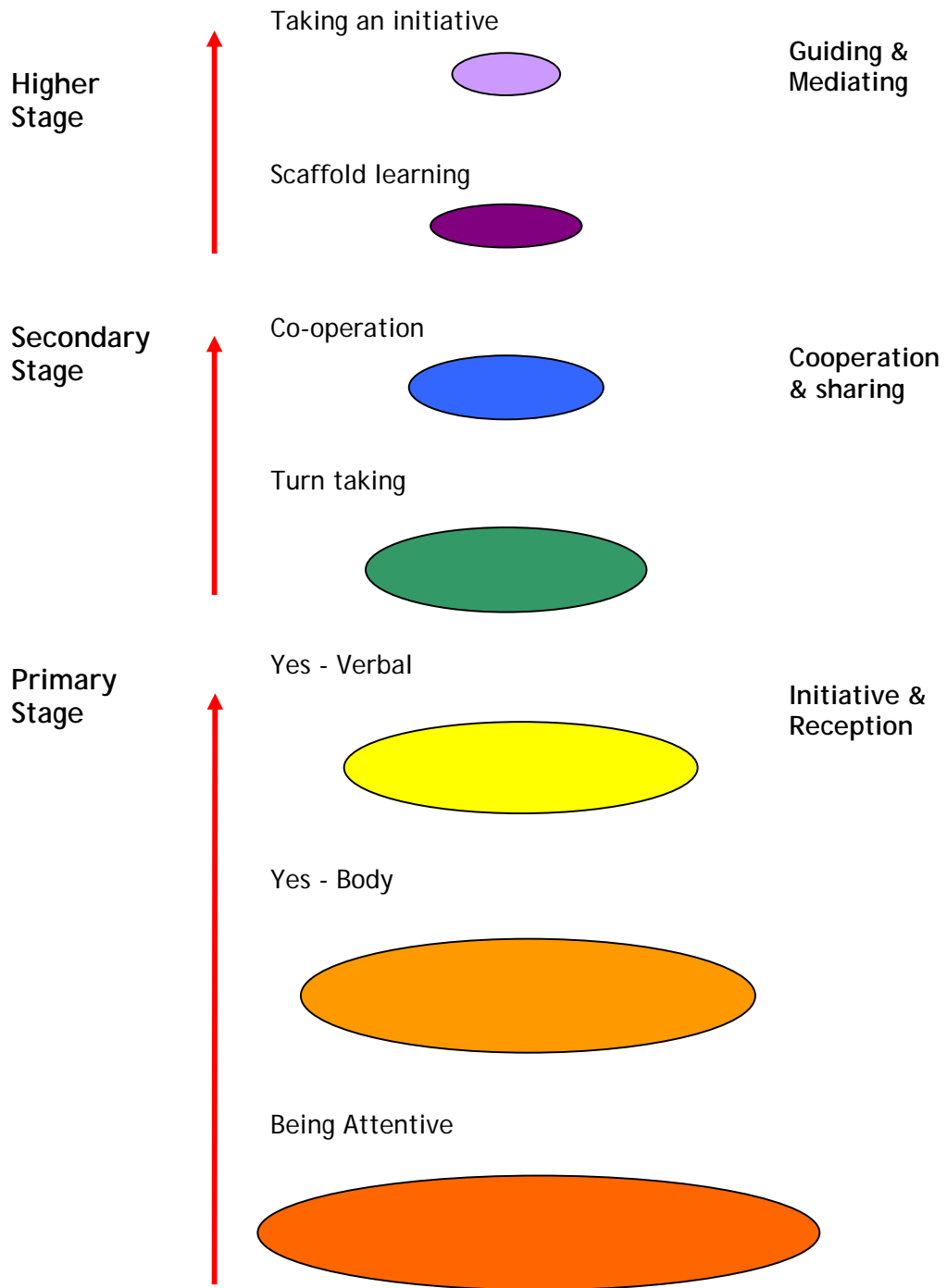
When the adult and child are attuned and have achieved primary and secondary intersubjectivity, they may enter a positive cycle of communication. When some elements necessary for that attunement are missing, a conflict or no cycle may develop.

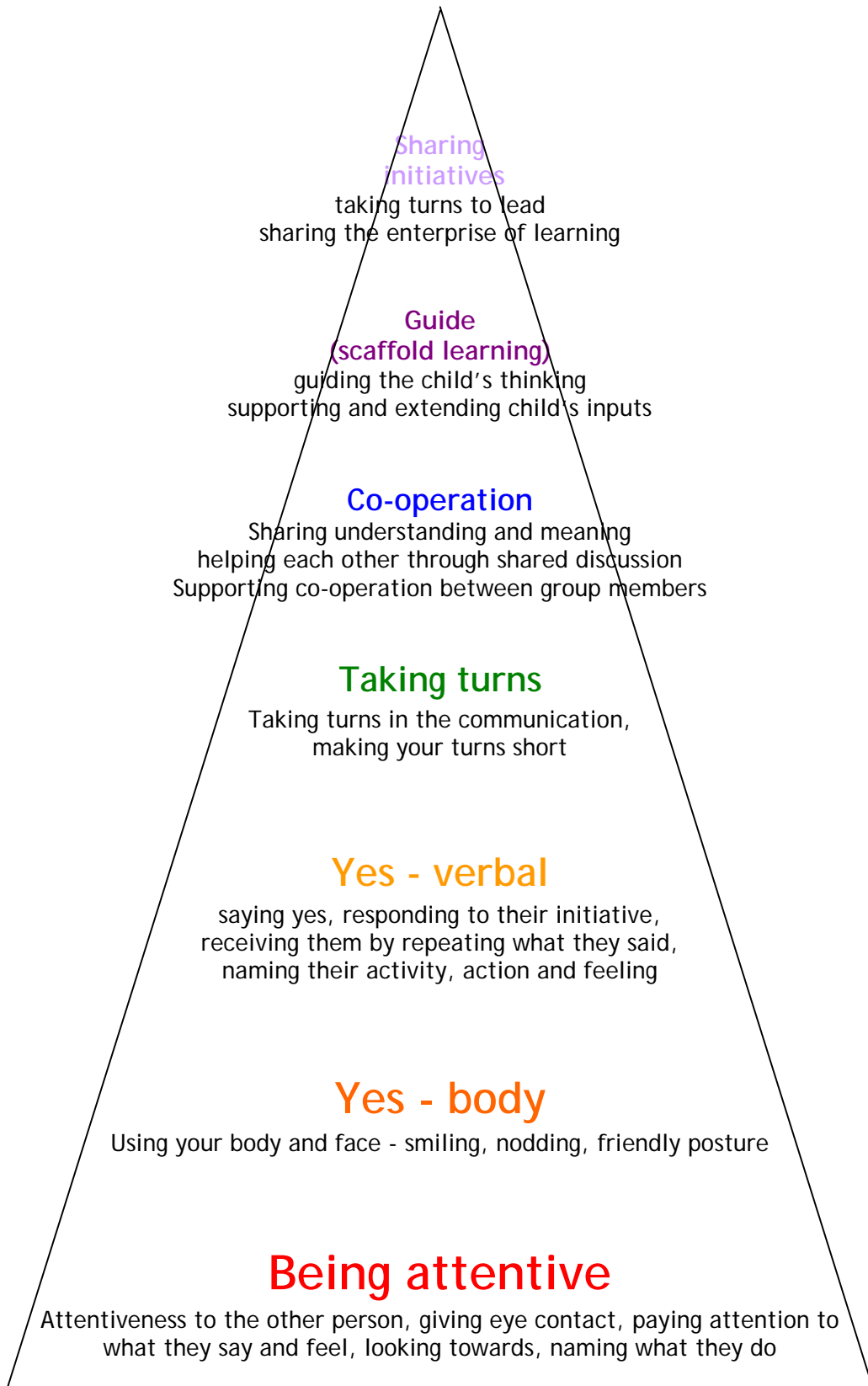


The 'Contact Principles' represent the specific elements of interaction between adults and children. Maintaining the contact principles when communicating with children, helps us stay within a YES cycle of communication and out of the NO or conflict cycle.

The contact principles provide a framework within which to guide your interactions. The hierarchical organisation of the contact principles is intentional. While all elements may be important, those lower down must be in place before more complex positive interactions may develop on this foundation.

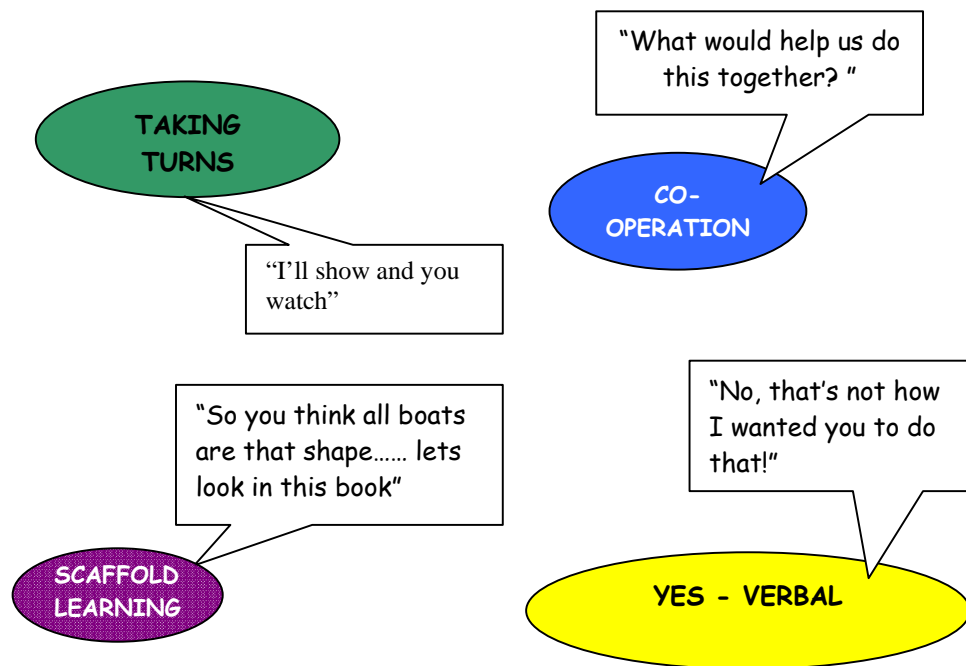
**The Contact Principles:  
For Effective Interactions with Children**





## Moving between the YES and NO Cycles

If contact principles are missing a NO cycle might develop. For example, if you try to guide the child's learning without first achieving the more basic principles of being attentive, yes-verbal and turn taking, the interaction may not be positive.



In the above examples the pattern of positive interaction may be sustained or may be broken. Think of other examples that might help interactions stay in the YES-cycle or that might allow interactions to slip into the NO-cycle.

By returning to the basic contact principles and trying to re-establish attunement through shared understanding and co-operation, the adult and child may re-engage in effective interactions for effective learning.

## SUMMARY

- The 'Contact Principles' represent the specific elements of positive interactions between adults and children. They are based on research from mother-baby interactions.
  
- Maintaining the contact principles when communicating with children, help us stay within the YES cycle of communication to achieve interactions for effective learning.
  
- The main skills to practice are:
  - Receiving children's inputs
  - Building on children's inputs
  - Taking short turns
  - Supporting co-operation in the group

## References

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**Appendix 2b: Evaluation of training session 1**

<b>Evaluation</b>
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1. How much did you enjoy this afternoon's presentation?

Not at all	It was ok	Quite a lot	Very much
------------	-----------	-------------	-----------

2. Thinking about your own practice with children, how useful was this presentation?

Not at all	Maybe	Quite useful	Very useful
------------	-------	--------------	-------------

3. What aspects did you enjoy most?

4. What aspect could we have done better?

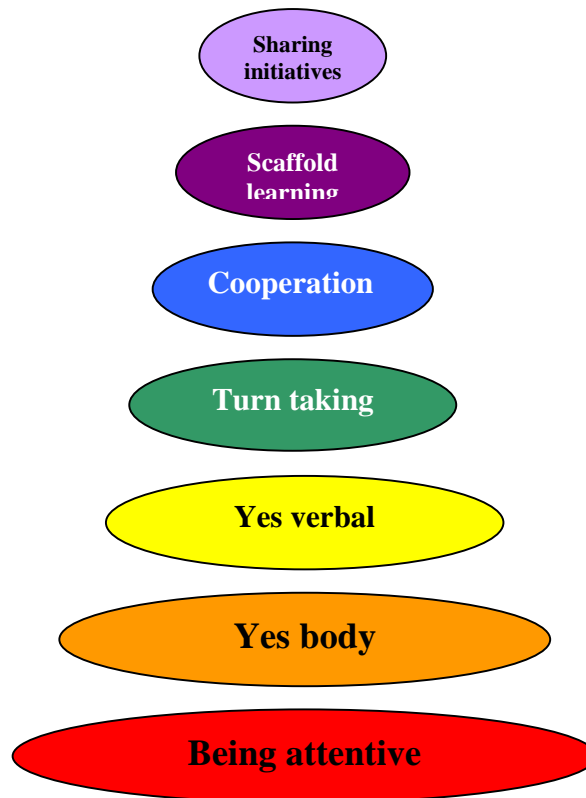
5. How might we have done this?

**And if you are coming to the next training session.....**

6. What would you like to see more or less of?

**Appendix 3a:** Activity booklet introduced in training session 2

# Working for Effective Interactions with Children: Activity booklet



Name.....

Feedback session 1: **Tuesday 24<sup>th</sup> February**

Feedback session 2: **Friday 5<sup>th</sup> March**

Feedback session 3: **Friday 19<sup>th</sup> March**

## SCAFFOLDING LEARNING / SHARING INITIATIVES

Last session we focused on the basic elements of positive interaction. We looked at the key characteristics and how we could use this as a framework to develop our own practice. Now we'll look more specifically at the kinds of things we say.

Children at Harmeny may have developed complex and negative ideas about themselves across contexts in the school and in the home. Thomson (1999) suggests this low self esteem affects a child's attitude towards learning and impacts on their perception of success and failure. The child may attribute success to luck, and failure to themselves. The child may fear challenge or new experiences and think failure is inevitable no matter how hard they try.

Scaffolding learning assists a child in the construction of their own knowledge while sharing initiatives results in sharing control of the direction and intentionality of the discussion. This together should help a child regain feelings of success, autonomy and motivation to learn. The work on primary and secondary intersubjectivity is crucial in first of all achieving positive interactions and reciprocity with the children and between children.

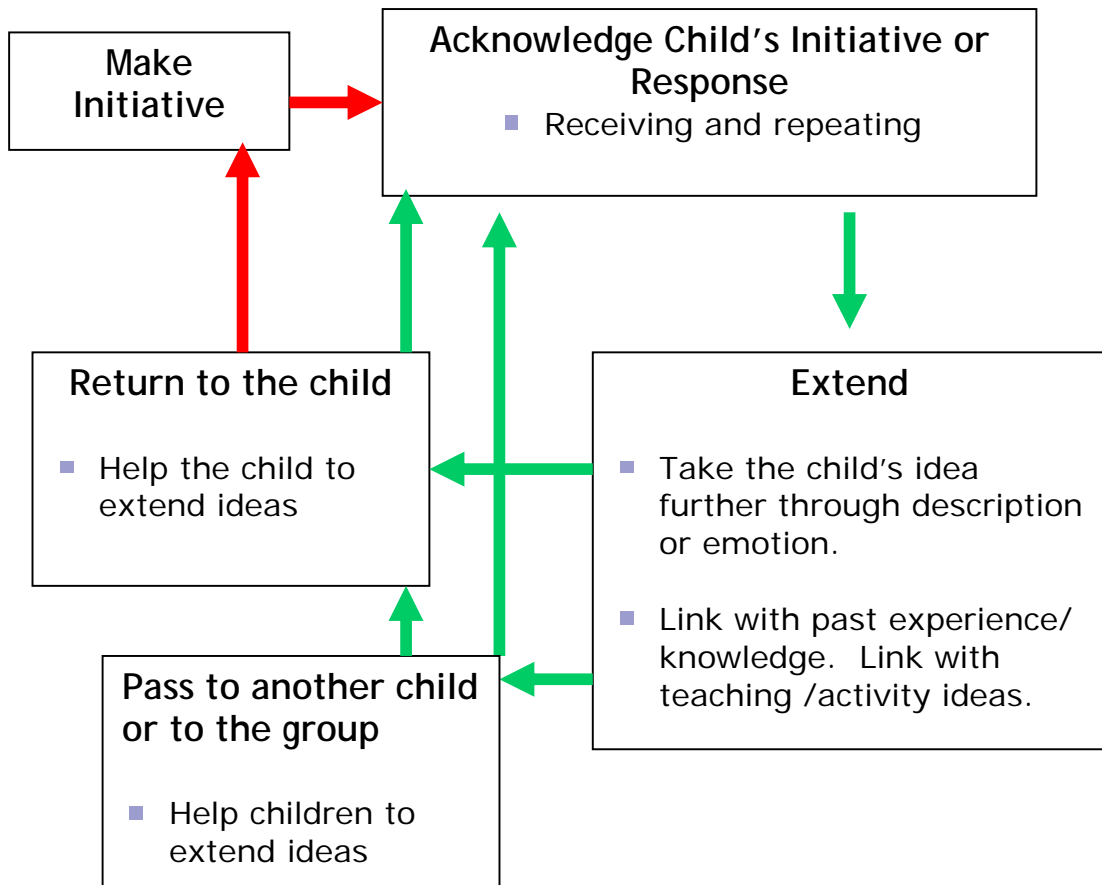
The aim of these more complex elements is to empower the child so they feel like an active participant in their own learning process. The process is child-centred where discussions evolve with the child on board.

1. **Scaffolding learning.** The role of the adult is to facilitate the child's development by helping them extend and enrich their knowledge and strategies. The child explores and constructs their world guided by the scaffolding you provide.



2. **Sharing initiatives.** This means both making initiatives and helping the child receive them, and receiving initiatives through acknowledging, elaborating and extending the child's input. The direction of control is shared.

**THE ROUTE TO SHARING CONVERSATIONS:  
helping children to learn together**



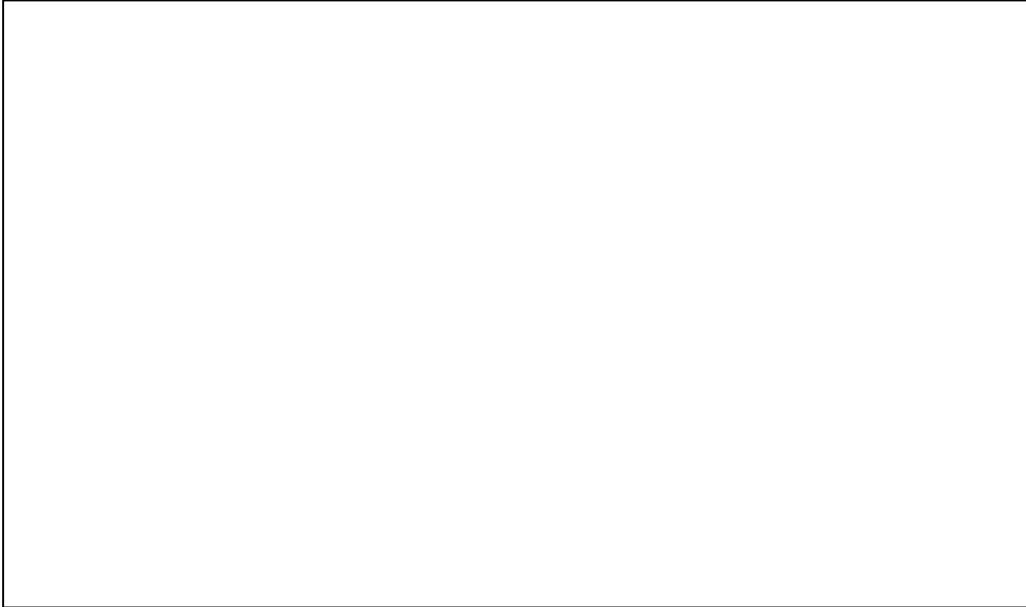
**Supporting co-operation**

The role of the teacher is also to support the process of co-operation between children in the class. This extends the social learning process to incorporate the group rather than just the individual child-teacher interaction.

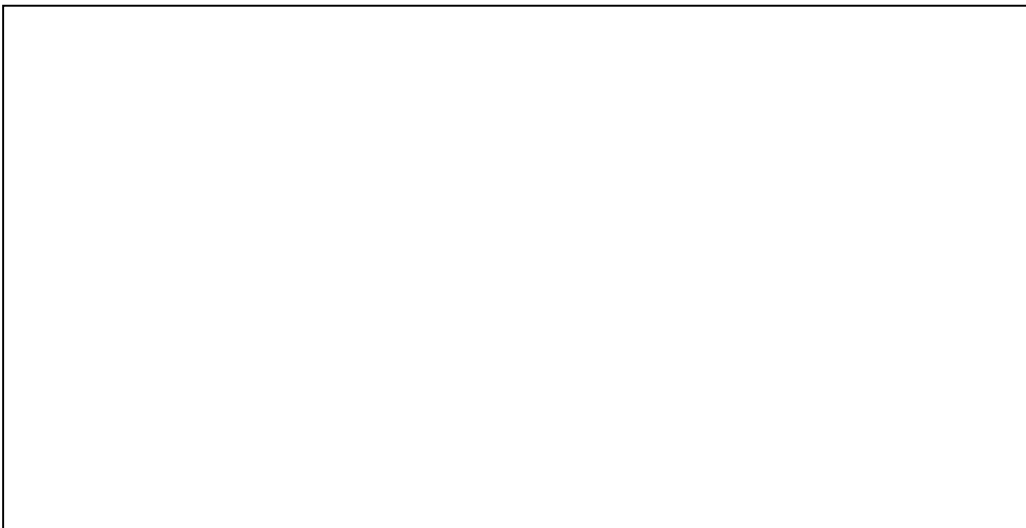
The teacher may provide communicative links between children to support the above process.

**Video clip 1**

Use the laminated sheet to tick off aspects of communication that you see.  
Additionally write any notes in the box.

**Video Clip 2**

Use the laminated sheet to tick off aspects of communication that you see.  
Additionally write any notes in the box.



## Collaborative Feedback Sessions

In this booklet you will find prompt sheets to fill out during the feedback sessions. During the session we will discuss strengths and areas that you wish to target based on your video. The feedback sessions are collaborative and give you an opportunity to reflect on and discuss your interactions based on the contact principles.

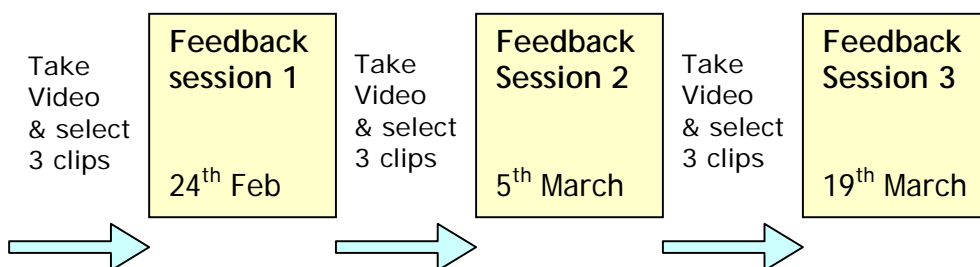
### Preparation

1. Take some video of yourself interacting with children. Ideally this should be during similar activities as the video you arranged prior to the training and between 10 and 30 minutes.
2. Watch this video and select three short clips where you think the interactions are positive, based on the contact principles and ideas we have discussed through the training sessions.

Before session 2, take new video footage and go through the same preparation as above selecting 3 short clips for discussion. And so on to session 3.

### Please bring with you....

1. The video with a rough idea of the times of the clips
2. The introductory and activity booklet and the laminated card



Please don't worry about the videos. We are looking together for positive interactions and ways to build on this!

## Feedback Session 1

Tuesday 24<sup>th</sup> February, 2004

Prior to this session you need to arrange for some video to be taken. Try and remember the activity that was videoed last time and if possible video some more of that.

Choose 3 clips from your piece of video that you consider to represent positive interaction with children. These clips can be very short from 5 seconds up to about 30 seconds. Consider what it is about these clips that make them positive, how do you respond to the child? This is what we will discuss during the feedback session.

You can make notes here to remind you of the nature of the clip & the time on the screen:

**Clip 1:**

**Time 1:**

**Clip 2:**

**Time 2:**

**Clip 3:**

**Time 3:**

The box below will be filled in at the feedback session.

**What I am pleased with:**

**What I would like to work on:**

**What I am going to do next to follow this up:**

## Feedback Session 2

Friday 6<sup>th</sup> March, 2004

Once again you need to arrange for some video to be taken for this session. Choose 3 clips from your piece of video showing positive interactions with children. These clips can be from 5 seconds up to about 30 seconds.

Again, consider what it is about these clips that make them positive, how do you respond to the child? What is the direction of control in the conversations? What is helping this?

**Clip 1:**

**Time 1:**

**Clip 2:**

**Time 2:**

**Clip 3:**

**Time 3:**

What I am pleased with:

What I would like to work on:

What I am going to do next to follow this up:

## Feedback Session 3

Friday 19<sup>th</sup> March, 2004

It's the final session. Please bring another piece of video footage taken since the last feedback session. Again, choose 3 clips from your piece of video representing positive interactions with children.

Consider what it is about these clips that make them positive, how do you respond to the child? Does the child feel empowered? Are they engaging with the task? What is helping?

**Clip 1:**

**Time 1:**

**Clip 2:**

**Time 2:**

**Clip 3:**

**Time 3:**

What I am pleased with:

What I would like to work on:

What I am going to do next to follow this up:

## CONGRATULATIONS!

You've made it! Thanks for taking part in this work. We hope you have gained ideas & skills to take forwards in your practice. If you have further questions or comments please get in touch with us any time.

**Appendix 3b: Prompt card introduced in training session 2**

<b>BEING ATTENTIVE</b>	
<p>Are you <b>supporting the interaction</b> by</p> <ul style="list-style-type: none"> <li>Looking interested</li> <li>Smiling</li> <li>Nodding</li> <li>Friendly intonation</li> <li>Friendly posture</li> <li>Waiting</li> </ul>	<p>Are you <b>paying close attention</b> by</p> <ul style="list-style-type: none"> <li>Turning towards</li> <li>Watching</li> <li>Listening</li> <li>Looking for initiatives</li> <li>Trying to work out what is in the child's head</li> </ul>
<b>INITIATIVE &amp; RECEPTION</b>	
<p>Are you <b>responding to the initiatives</b> by</p> <ul style="list-style-type: none"> <li>Naming what you hear</li> <li>Checking that you have understood</li> <li>Saying 'yes'</li> </ul>	<p>Are you <b>encouraging initiatives</b> from the child by</p> <ul style="list-style-type: none"> <li>Showing you are interested</li> <li>Naming what you see or hear</li> <li>Saying what you are doing</li> <li>Saying what you are thinking</li> </ul>
<b>INTERACTION</b>	
<p>Are you <b>forming a group</b> by</p> <ul style="list-style-type: none"> <li>Sharing turns round the group</li> <li>Giving and receiving turns</li> <li><input type="checkbox"/> Helping children receive and build on each other's ideas</li> <li><input type="checkbox"/> Making links between children's inputs</li> </ul>	<p>Are you <b>encouraging short turn-taking</b> by</p> <ul style="list-style-type: none"> <li>Taking short turns yourself</li> <li>Waiting attentively after your turn</li> <li>Giving the child a second turn on the same topic</li> <li>Receiving their second turn</li> </ul>
<b>SCAFFOLDING &amp; GUIDING</b>	
<p>Are you <b>extending the child's responses</b> by</p> <ul style="list-style-type: none"> <li>Taking initiatives</li> <li>Building on children's responses</li> <li><input type="checkbox"/> Relating children's ideas to previous learning</li> <li><input type="checkbox"/> Relating children's ideas to other ideas introduced by</li> </ul>	<p>Are you <b>balancing leading and following</b> by</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Introducing initiatives that encourage responses from children</li> <li><input type="checkbox"/> Following their lead</li> <li><input type="checkbox"/> Asking children to extend their own ideas</li> <li><input type="checkbox"/> Asking children to extend the ideas of each other</li> </ul>

**Appendix 4a: Questionnaire regarding interactions with children****Working for Effective Interactions with Children****About you:**

1. Which area of work are you involved in?

Care	Education
------	-----------

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**About interactions with Children:**

1. What are the most important factors in positive interactions with children?

- 
- 
- 

2. What do you think are the major contributing factors to the challenging behaviour presented by some children?

- 
- 
-

**Appendix 4b: Final evaluation form discussed at plenary session****Evaluation of training****The training:**

1. Do you think this training has been effective in helping you develop your practice with children?

IF SO.....

2. What aspects of the training were particularly helpful in this?
  
  
  
  
  
  
  
  
  
  
3. In what ways, do you think, has your practice with children developed?

**Moving on:**

4. Would you like to do any of the following?
  - Continue using video feedback for staff development
  - Use the video feedback method with the children
  - Use video feedback during supervision sessions
  - Other

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**Any other comments:**

Thank you!

**Appendix 5: Actual talk-times of children and teachers in 12 minutes of interaction time, before and after intervention (in seconds)**

**Before intervention**

	Teacher 1	Teacher 2	Teacher 3	Teacher 4	Teacher 5
<b>TEACH-TALK</b>					
Link inputs	2	0	1	0	1
Pass chA-chB	2	0	0	0	3
Pass chA-group	3	1	0	0	0
<b>Total</b>	7	1	1	0	4
Extend child	159.56	55.08	43.80	26.98	50.36
Request extend	29.16	6.72	19.96	6.48	1.00
<b>Total</b>	188.72	61.80	63.76	33.46	51.36
Give information	165.28	203.68	196.30	165.28	182.12
Make request	170.64	224.16	169.37	143.40	164.72
(Content	4.80	6.96	4.17	7.76	0)
(Proc co-op	308.96	302.44	342.31	196.80	288.80)
(Behaviour	22.16	118.44	19.29	104.12	57.80)
<b>Total</b>	335.92	427.84	365.67	308.68	346.84
<b>Total teacher</b>	<b>524.64</b>	<b>489.64</b>	<b>429.43</b>	<b>342.14</b>	<b>398.22</b>
<b>CHILD-TALK</b>					
Ch-initiate-teach	26.84	36.64	58.97	69.64	41.80
Ch-initiate-child	0	3.72	7.36	8.64	31.56
Ch-extend-teach	43.36	21.84	45.85	47.92	8.16
Ch-extend-child	1.28	3.44	0	4.28	0
Ch-self-teach	27.96	19.16	6.05	3.76	4.32
Ch-self-child	0	0	0	3.88	0
Ch-teacher-neg	17.60	33.36	14.48	25.04	0
Ch-child-neg	4.80	21.20	11.60	60.56	0
Total child-teach positive	98.16	77.64	110.87	121.32	54.28
Total child-child positive	1.28	7.16	7.36	16.80	31.56
<b>Total Child</b>	<b>121.84</b>	<b>139.36</b>	<b>164.27</b>	<b>223.72</b>	<b>85.84</b>

**After intervention**

	Teacher 1	Teacher 2	Teacher 3	Teacher 4	Teacher 5
<b>TEACH-TALK</b>					
Link inputs	12	8	11	3	3
Pass chA-chB	2	5	1	2	1
Pass chA-group	12	0	3	2	0
<b>Total</b>	26	13	15	7	4
Extend child	98.52	102.32	64.68	140.28	104.32
Request extend	65.96	52.28	55.76	4.36	1.56
<b>Total</b>	164.48	154.60	120.44	144.64	105.88
Give information	76.80	127.08	108.48	265.32	123.40
Make request	83.32	74.84	115.08	83.00	145.08
(Content	88.84	165.84	200.40	269.80	227.28)
(Proc co-op	47.40	0	12.84	12.52	12.76)
(Behaviour	23.88	38.56	10.32	66.00	28.44)
<b>Total</b>	160.12	201.92	223.56	348.32	268.48
<b>Total Teacher</b>	<b>324.60</b>	<b>356.52</b>	<b>344.00</b>	<b>492.96</b>	<b>374.36</b>
<b>CHILD-TALK</b>					
Ch-initiate-teach	59.92	58.36	31.80	48.64	55.44
Ch-initiate-child	42.32	4.48	0	5.40	9.84
Ch-extend-teach	20.72	101.72	4.48	44.00	10.76
Ch-extend-child	89.24	34.16	33.08	24.68	13.28
Ch-self-teach	83.68	60.84	112.20	28.16	18.80
Ch-self-child	22.32	20.28	0	1.48	0
Ch-teacher-neg	0	4.76	0	2.96	0
Ch-child-neg	8.96	2.16	1.76	22.48	6.20
Total child-teach positive	164.32	220.92	148.48	120.80	85.00
Total child-child positive	153.88	58.92	33.08	31.57	23.12
<b>Total child</b>	<b>327.16</b>	<b>286.76</b>	<b>183.32</b>	<b>177.80</b>	<b>114.32</b>