Implementing Intensive Interaction in a specialist school setting

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Abstract

This study evaluates the process of implementing a new teaching approach, in this case Intensive Interaction, into a specialist school. The aim of the project was to improve engagement with pupils with autism, severe learning difficulties and challenging behaviour in education. This study was framed by the transactional model of child development (Wetherby and Prizant, 2000), the social model of disability (Corker and Shakespeare, 2006) and Lewin's model of change management (1947) as well as inter-subjectivity theory.

During a fourteen-week data collection period, practitioners' ability to implement the approach and sustain the change was evaluated. The receptiveness of staff to the training was also investigated. Videos recordings of three dyad pairs of pupil and practitioner generated a large volume of rich qualitative data. The existing educational approach was video recorded weekly over a period of six weeks and this was followed by staff training on Intensive Interaction. Post-training educational practice was recorded weekly and the video recordings provided the basis for both video stimulated recall sessions and a warm and cool feedback session to increase the capacity for staff to reflect critically on their own practice. In addition to the video and stimulated recall process, questionnaires were utilised to gain the views of the wider staff team about the training and the implementation of Intensive

Interaction. The data from the questionnaires produced quantitative data that was used to triangulate some of the findings from the video study. Despite the commonality of the training and similar challenges faced by each pupil, the study demonstrated significant variances in the implementation. The analysis highlights the factors that influence the implementation in this case and have led to the development of a "Ladder of Intensive Interaction Techniques" which can guide the progressive development of the practitioner's skills in II. A second model was also developed "Stages of Professional Development" and this focuses on the professional development process more generally to allow a potentially wider application with similar interventions in specialist contexts. The research shows how such specialist training programmes are unlikely to be uniformly effective as practitioners' layer and blend new ideas onto existing beliefs, knowledge and practice. There are clear implications for school leaders and other change agents.

Table of figures

List of Abbreviations

SLD	Severe Learning Difficulties
CB	Challenging Behaviour
II	Intensive Interaction
TEACCH	Treatment and Education of Autistic and related Communications handicapped Children
VSR	Video Stimulated Recall
SEN	Special Educational Needs
TA	Teaching Assistant
TMCD	Transactional Model of Child Development
ABA	Applied Behaviour analysis

Chapter 1: Introduction

Autism is a condition in which inborn characteristics or differences impact on a person's interaction with people and within environments. Some children with autism find it difficult to engage with people due to the way the autistic differences affect them. This can have considerable impact on their education and this may be further compounded if the child also presents with a learning difficulty and challenging behaviour (CB). As an ability to engage in reciprocal communication and social interaction are pre-requisites to learning, the aim of this study was to improve both participatory social inclusion and communicative skills through the implementation of an appropriate teaching approach.

Many approaches to teaching pupils with autism focus on the behaviour the pupil needs to change rather than how adults can change their interactions to support the pupil's development. Prizant et al. (2006) argue that the interaction style of the adult plays a significant part in facilitating better interaction with the autistic child. Most approaches involve some aspect of advising adults on how to deliver a particular approach in an educational setting. In order to have the greatest potential impact in supporting the child's development, the focus need to be on the adult's interaction style and providing an environment that is enabling the child to communicate.

This argument provides the rationale for focusing this research specifically on the process and outcomes of implementing Intensive Interaction (II). I wanted to understand the process of implementing a new intervention in my unusual educational context, in which I am the head teacher. Therefore, I organised staff training, collected data about views and experiences and captured what happened over time on video recordings.

The research focus is narrowed to a mixed method's embedded case study design (Punch, 2009) containing 4 embedded units; three of practitioner/pupil dyads to qualitatively examine the extent to which individuals were able to make changes in their interactions as suggested by the training and one unit of questionnaire data to quantitatively measure the change in the whole school. The research model (Figure 1) enabled in-depth investigation of the factors that influence the extent to which staff are able to monitor, reflect on and ultimately change their practice.

Pre-empirical stage
What is the research trying to answer?

Research area
Special Education

Context → ↓ ← Literature

Topic
The implementation of a suitable approach to educating pupils with autism, severe learning difficulty and challenging behaviour to enable them to engage with education.

↓

Research Questions

Primary: What are the important factors to consider when instigating a change in teaching practices in a special school in the UK?

Specific:

a) How do staff member's skills, abilities, interests and backgrounds influence the change process?

b) How does the staff team respond to, and utilise, the training?

c) What factors contribute to the embedding of the "new" teaching practice?

↓

Empirical stage
How will the research answer the questions?

Design
Mixed methods, embedded Case Study

↓

Data collection
Questionnaires
Observations
Video Stimulated Recall
Warm and Cool feedback

↓

Data analysis
Thematic analysis
Content analysis

↓

Answer questions
Discussion
Result

Figure 1: Research model adapted from Punch (2009)

My research of the change process is necessarily from my point and angle of view. I am an insider researcher with a particular and detailed knowledge of the school and participants. This perspective may well be very different to that of an outsider undertaking a similar research study. The term insider researcher refers to me being embedded in the research context and there are both advantages and disadvantages to this position. Moreover, as, the head teacher of this specialist school I have unique insights into the school, the staff and the challenges of change and these will be considered below. The power dynamic of the position I hold as head teacher will also be explored and is another important consideration throughout this project.

1.1 Motivation for this study

I have been working in the field of special educational needs for many years and of particular interest to me is the area of teaching children with autism compounded by severe learning disability (SLD) and challenging behaviour (CB). My doctoral research journey began at the University of Nottingham due to an initial keenness to investigate how education can be differentiated to meet the needs of each pupil regardless of complex and often puzzling presentations. As a head teacher I have a strong commitment to, providing high quality, individualised education programmes that promote the pupils' learning and quality of life.

I have always worked in special education, initially in a generic special school where all the learners could access the curriculum as they had the ability to relate and engage with others. The move to a special school specialising in autism and SLD necessitated a different approach as some of these learners were unable to attend to others and consequently unable to access meaningful education. This environment increased my interest in understanding, developing and enhancing practices for autistic learners. This interest was strengthened upon learning that my three sons have autism compounded with a variety of other difficulties.

This determination to provide meaningful education to learners who have autism and SLD compounded by CB has led to this research. Although close-to-practice research can be of great value, being an insider can compromise the researcher's ability to critically engage with the collected data (Drake and Heath, 2011) and so it is important to be reflective, recognising that one is embedded in the very context of study. I will discuss this problem further below.

The pupils in the school all have autism, however the individual presentations of the condition vary significantly. These variances may be due to the pupil’s characteristics and difficulties and the interplay with factors in the pupil’s environment. Due to this complexity, I frequently review practices within the school. As a consequence of this, changes to the educational approaches utilised in the school are often deemed necessary. Yet changing educational practice is known to be difficult and my experiences in this unusual school context are no different. This study is born out of a desire to understand the complexities of such change process, at the interpersonal level as well as for the school as a whole.

As part of my headship, existing knowledge and practice within the school was evaluated. This took the form of a service level review that considered individual pupil’s engagement, attainment and social skill development. A small group of pupils were found to not be accessing the existing curriculum and this evaluation led to a plan to individualise the educational approach for a particularly complex group of learners.

The school aims to ensure growth and development through the use of individualised learning objectives. In order for all of the pupils to have equal access to quality education, learning programmes need to be personalised. There will be a complex interaction between the pupil’s diverse presentation and the environment in which the pupil is being educated and this must be acknowledged to provide meaningful education.

1.2 The Context of the study

The school is an independent specialist autism school located in the North of England. It is registered for up to forty pupils and each pupil receives their own unique package of education based on the individual's complex needs. The demand for the service comes from throughout the United Kingdom and this is testimony to the very specialist education provided by the school.

The typical trajectory for pupils who attend the school is that they have previously been educated in their Local Authority special school and sometimes multiple special schools. In time, their needs are considered either too complex or too challenging in terms of behaviour to be met locally. Pupils might have high levels of self-injurious behaviour or aggressive behaviours towards staff or a high level of damage to the physical environments. The Local Authority often cannot meet this very high level of need and as there would be very few children with this level of complexity within any one Local Authority a nationwide search for a service to meet these needs is undertaken. This results in many children ending up in 'out of area' placements.

In its recent Ofsted inspection, the school was rated as "Outstanding" for its innovative approach to meeting the individual needs of pupils. The ethos of the school supports the view that every child has a right to meaningful and appropriate education (UNCRPD, 2006; DfE, 2014c) and agrees with Guldberg (2010) and Jones and Howley (2010) that a "one size fits all" model of education is neither appropriate nor meaningful. The model offered at the school is individualised through an initial assessment to ensure that the input is adjusted to achieve maximum outcomes.

Although the main approach utilised within the school is TEACCH, the pupils have access to a range of approaches and methods and despite their knowledge and training the staff members meet the needs of the individual pupils in very different ways with varying levels of success. The impact of this is that some pupils make good progress where teachers are able to utilise their differing strengths and ways of teaching to good effect, whilst other pupils are engaged in activities that are not well designed for the pupil's individual needs.

The staff within the school have been trained to deliver various internationally recognised approaches to teaching autistic children such as Treatment and Education of Autistic and related

Communication Handicapped CHildren (TEACCH) (Schopler, 1997), Applied Behaviour Analysis (ABA) (Dempsey and Foreman, 2001) and Picture Exchange Communication System (PECS) (Bondy and Frost, 2002). These approaches focus on changing the behaviour and communication style of children with autism through organising the environment and learning tasks, such as TEACCH or repetitive discrete trials of skills, such as ABA and PECS. The practitioner's role in facilitating these approaches also include ways in which they should change their interactional style, however, the focus of the approaches is still on a teacher-directed pedagogy.

The majority of pupils in the school have moderate to severe learning difficulties in addition to their autism. Often this results in pupils having challenging behaviours that can be a result of them either not being able to communicate their needs or frustrations, or have their sensory needs met or it could be as a result of triggers from both internal and external sources. One particular challenge is that some of the pupils spend a majority of their day engaging in repetitive and ritualistic behaviours. When engagement in these behaviours is disrupted, pupils often display high levels of aggression towards self and others. Some key areas need to be addressed in order to offer a successful educational provision across the spectrum and these include gaining attention and motivating pupils in addition to promoting social communication and social interaction which need to be achieved through a structured teaching and behaviour management approach (ACCAC, 2000).

Compared to a mainstream school with 30-35 pupils in the class, most of the pupils in the school have individual classrooms (with a minimum of 1:1 support) but will join the group classroom for particular lessons. However, the class size never exceeds 5 pupils. This accommodation is made for a variety of reasons; 1) the pupils' CB presents a risk to other pupils, 2) the pupils' anxiety level limits their ability to access certain environments and 3) it allows for a highly individualised curriculum. The quality of curriculum delivery, staff attitudes, and curricular modification contribute to an inclusive learning environment in which each pupil is given an equal opportunity to learn in accordance with their abilities and needs. The unique curriculum offer available within the school focuses on developing pupils' skills and knowledge to promote social inclusion.

The school has high staffing levels with a minimum of 1:1 teaching assistant/pupil ratio. Teachers are recruited with a highly specialised training background and experience working with this complex pupil group. They oversee the educational input of a maximum of five pupils. The teaching assistants (TAs) come from a diverse range of backgrounds, both in terms of education and experience. On-going training and professional development is given to ensure that the practitioners develop their skills throughout their employment. This includes basic autism training on induction and more specialised training, for example TEACCH and PECS, as appropriate. Although this diversity of staff allows for good matching of staff members to pupils, it also means that some staff members may not be well equipped to work with certain pupils.

As a result of the review of provision a new approach was identified that might meet some of the unmet needs of the pupils. This research investigated the process of implementing the II approach. II aims to develop an ability to engage in reciprocal communication and social interaction by developing the fundamentals of communication (Nind and Hewett, 1994; 2005). The process of this change was evaluated and important factors to support professional development were identified and discussed.

1.3 Significance of the study

The number of children diagnosed with autism is on the increase (Baird et al., 2006) and it is estimated that around 700 000 people with autism live in the United Kingdom (Iemmi et al., 2017). Some people with autism find it difficult to interact with others and the need to develop communication skills is important for the person's ability to interact with and control their immediate environment.

This research aims to analyse and discuss the implementation of an established approach into a specialist school with a particular focus on the impact of staff on facilitating a reciprocal communication process.

Several factors make this study relevant. Firstly, there's a gap in the literature relating to implementing new approaches into specialised schools. Secondly, there is a shortage of empirical studies conducted in real life settings of the impact of staff on the success of a particular approach. Thirdly, the growth of autism diagnosis underlies the urgency of studying approaches to addressing the diverse needs of these learners. Finally, a number of studies have confirmed that a particular challenge facing teachers working with autistic children is the facilitation of spontaneous communication and this study explores how this can be achieved effectively.

1.4 Research design parameters

Given the need for evidenced-based empirical studies regarding children with autism, the present study utilised a mixed method, embedded design (Punch, 2009) to gather data on a group of people in a specific setting over time. The case is the implementation of II within the school and considers the implementation of a new approach, factors in the adoption of this by staff and the impact of the approach on the individual pupils. Due to the real world setting of this research it is also important to consider the applicability of the findings to other similar settings to the one in which the data has been obtained.

Woodcock and Page (2010) state that a majority of studies on autism and communication have been done in environments unfamiliar to the child, hence any findings from these studies may be limited in terms of developing evidenced based practice in educational settings. Some researchers believe that the communication of autistic children is better explored in familiar environments with familiar people undertaking familiar activities (Ogletree, et.al., 2002; Chiang, 2009). This will minimise potential inhibiting or anxiety producing effects of unfamiliar settings, activities and people.

All staff within the school participated in the project through completing questionnaires at set points in the study and five staff and three children with autism, CB and SLD were selected to participate directly in the implementation of II. Out of the initial six dyad pairs of pupil-adult, three were excluded; two for methodological reasons and one due to long-term absence.

1.5 Use of terminology

There is disagreement across the UK autism community about the way autism should be described (Kenny et.al., 2016). The medical model of disability uses the term Autistic Spectrum Disorder (ASD) as this is used in The Diagnostic and Statistical Manual of Mental Disorders (DSM-V) (APA, 2013). In the latest revision of the fifth edition of the manual, ASD is the only diagnostic term given and previous terms have been removed, e.g. Asperger's Syndrome. Some researchers (Baron-Cohen, 2000) suggest the term disorder may have a negative connotation and for this reason he suggested 'Autistic Spectrum Condition'. Some autistic adults also expressed a view that they avoid seeing autism as a disorder but instead view it as a different way of seeing the world (Kenny et.al., 2016). I refer to the term 'autism' throughout this thesis in order to describe the whole spectrum of autism, including Asperger syndrome and Kanner's autism. This term is in agreement with the usage of the term 'autism' issued in guidelines by the National Institute for Health and Clinical Excellence (NICE, 2014).

There are also disagreements amongst the autism community as to whether to refer to the individual first and then to their disability, if necessary '*person-first language*' (Bailey, 1991; Blaska, 1993) or whether to refer to the disability first e.g. *autistic person.* This view is expressed by some members of the autism community who have accepted their autism diagnosis to be a part of their identity (Davidson and Henderson, 2010). Throughout this thesis I refer to the 'child with autism' or 'autistic child' interchangeably and do not intend any negative connotation in the terms I have selected.

The term severe learning disability (SLD) will be used throughout this paper to denote pupils with substantial intellectual and cognitive disabilities. The term learning disability has been referred to as 'intellectual disabilities' by the British Psychological Society (2015), but the term learning disability is the norm in UK policy and so will be referred to in this thesis. The Special Educational Needs Codes of Practice (DfE, 2014c) refers to the terms 'moderate learning difficulty', 'severe learning difficulty' and 'profound multiple learning disability' which are used as descriptors to explain the levels of severity in impairments in learning. For the purpose of this study, SLD is intended as a descriptive term to illustrate the needs of the pupils included in this study.

Challenging behaviour (CB) is a term used throughout this project. I use this term to encapsulate behaviour that is shown by the pupils that may interfere with the interactive process for example, hitting out at others or self-injurious behaviours. This term is used in the sense of encouraging staff to find effective ways of understanding a pupils' behaviour and its underlying causes. This behaviour needs to be considered to ensure staff and pupil safety is maintained throughout the project. Other preferred descriptions could perhaps include 'behaviours that challenge' (NICE, 2015). I do not intend any negative connotations by the term challenging behaviour and very much consider these behaviours as indicators of unmet need or lack of being able to express an emotional response in any other way.

1.6 Research questions

As the overarching research aim was to evaluate implementation of II in a specialist school setting. This was to be within the context of a specialist autism school with pupils with SLD and CB. From this aim the primary research question was formulated:

> *What are the important factors to consider when instigating a change in teaching practices in a special school in the UK context?*

From the main research question three specific research questions were identified:

a) *How do staff members' skills, abilities, interests and backgrounds influence the change process?*

b) *How does the staff team respond to, and utilise, the training?*

c) *What factors contribute to the embedding of the "new" teaching practice?*

This project utilises a pragmatist, practitioner research approach with an interpretivist epistemology.

1.7 Structure of the thesis

This thesis is organised into six sections, starting with this chapter (Chapter 1: Introduction). In this chapter I have presented the background and context for the study and also clarified the broad aims of the research. Chapter 2 reviews relevant literatures and presents the theoretical framework for the research, with particular attention to the social model of disability and the transactional model of child development. Attention is also directed towards the theories about autism with a focus on concepts like inter-subjectivity and enabling environments. Furthermore, the term challenging behaviour is explored leading to a section providing an overview of the development of communication in typically developing children and autistic children, communicative functions and issues faced by the autistic child with respect to social communication.

Chapter 3 will explain how I plan to answer my research questions. The research will utilise the case study approach, as this is a small-scale study addressing real life issues in a specific context. This approach has been criticised for providing an account of unique circumstances (Drake and Heath, 2011) but the approach allows me to understand each component of the implementation process in depth. This attention to detail will maximize the understanding gained from a unique learning environment. The case study is context bound and addresses real life issues (Kindon, Pain and Kesby, 2010) and the outcomes of this research must be seen in a context based in time and space.

The research utilises a number of methods to gather data that can be triangulated and this is particularly important given the potential biases of insider research (Drake and Heath, 2011). This allowed for a detailed implementation process to be captured and the four embedded units will illustrate the impact of the implementation process on the staff and the pupil's outcomes. Chapter 4 presents the four units. Unit one, two and three describes how the implementation impacted on dyad pairs consisting of practitioner and pupil whilst unit four presents the results from the whole school questionnaire.

In Chapter 5 I discuss and analyse the differing responses, both in terms of observed practice and questionnaire response. I analyse the differing implementation points and their impact in the process for each of the individual units. Following the analysis there is further discussion around individual's ability to change through planned professional development. Finally, the outcomes and impact on the pupil in each case and how their responses may have affected the process of professional development will be discussed in detail.

The conclusion chapter focuses on the important factors to consider regarding the influence of individual staff members on the implementation process, the outcomes for the pupils and the learning process for them. In addition, the strengths and weaknesses of the process will be discussed and any learning gained from this. The recommendations outlined consider the relevance of the study and wider application and future research needs.

Chapter 2: Literature review

In this chapter I will review current concepts of change and professional development contextualised within current autism education theory, practice and research. Firstly, concepts related to the human factors of change, subjective realities, developing a shared language of teaching practice and critical refection will be investigated in some detail. This discussion leads to Lewin's model of change management and links this thesis to the social model of disability.

Secondly, I will review this context in relation to individual needs and the National Curriculum which leads on to a discussion on autism as a condition where concepts related to challenging behaviour, social communication, inter-subjectivity and enabling environments will be investigated in some detail due to their importance relating to the child's right to an appropriate and meaningful education. This thesis draws on the transactional model of child development.

The discussion will then focus on evidence based practice and pedagogy, firstly investigating the evidence base for autism interventions. Concepts like behavioural/naturalistic and developmental/relationship based approaches will be discussed. The discussion will then centre around professional development and training due to the significant role teachers and TAs hold in an education service.

The last section of the literature review will investigate the theoretical basis for II with a particular focus on autism and challenging behaviour. Concepts around the fundamentals of communication and staff member's role in facilitating a common experience where two people can develop a communicative approach on a basic level will be explored.

2.1 The human factors of change

Achieving change in educational practice is notoriously difficult as it requires re-alignments in knowledge and beliefs and a lot of time and effort is required to achieve successful change (Edwards and Nuttall, 2009; Robson and Fumoto, 2009). Verhulst (2012) found more than 60 factors that may influence the change process and many of these related to people. IBM (2008) found indications that human factors are the hardest to change and argued that it is important to gain the commitment from the participants for change to be effective and sustainable. Motivation, commitment and expectations can be generated through empowerment, facilitating involvement and effective communication (Lewis, 2006) which will minimise resistance to change which is the most common reason for failure (Lines et al., 2015; Kotter and Schlesinger, 2008; Smith, 2005). Kellet (2003) argues that the value of the change must be considered in relation to who benefits and also the capacity of the process to generate change.

Erwin and Garman (2010) argue that human factors of the change process have three dimensions: 1) the cognitive dimension encompasses how a practitioner thinks about a change including their perceived capability; 2) the affective dimension covers the emotional and physiological reactions to change and 3) the behavioural dimension which can be described as the actual manifestation of one and two. It is only the behavioural dimension that is directly observable and it may be that the change has been understood cognitively, i.e. the practitioner can "talk the talk" but is unable to implement the change through their behaviour. Lines et al. (2015) make the case that it is within the behavioural dimension of change that any resistance to change can be directly observed. Fullan (2016) argues that behaviour and emotion often change before beliefs as people learn by thinking about their new doing. This means that behaviour speaks to people's feelings which in turn influences their thoughts and depending on the feelings and thoughts that have been evoked, a new belief may be created.

2.1.1 Subjective reality

Subjective perceptions are important as people behave in accordance with their perceptions, not in accordance with more objective data (Raineri, 2011). Fullan (2016) argues that accurate analysis and factual information alone does not motivate people to make changes. Changes in culture, role behaviour and conceptions of teaching and learning are much harder to achieve than superficial changes in content, standards and structure (Fullan, 2016). Fullan (2016) argues that there are multiple, subjective realities experienced by people and this makes educational change technically simple yet socially complex. Educational change is a process of coming to terms with these multiple realities as each individual’s knowledge, skills, beliefs and values will be different (Hargreaves and Shirley, 2009; Fullan, 2016; Creasy, 2017).

Hargreaves and Shirley (2009) make the case that new experiences give us something new to think and learn about. These experiences contrast with familiar, reliable constructions of reality in which people attach personal meaning to the experiences (Marris, 1975). This subjective reality may be constructed differently by different people. Marris (1975) does not see the different subjective realities as incompatible with growth but rather consolidation of skills and attachments provides the assurance to master something new.

Experience builds on previous experience, values and beliefs and it could form the basis on which to engage teachers in developing and applying new knowledge, skills and understandings which is essential for the change to be successful (Fullan, 2016). Hargreaves and Shirley (2009) believe that you can connect a different future to the successes of the past, that change is not about abandoning everything you have valued from the past but it is important to know when to "let go".

2.1.2 Developing a shared language

A consequence of the change process is that it challenges the practitioners' thinking which in turn may impact the way they feel (Fullan, 2016). Each practitioner needs to understand their role in the implementation process (Lines et al., 2015) but prior to that they need to have a clear, shared understanding of the desired future state and how the goal may change their current practice (Fisher and Wood, 2012). Training prior to the implementation can develop cognitive knowledge and a shared language of the topic but, the staff also need interactive and on-going support during the implementation to enable cumulative learning (Fullan, 1991). Fullan (1991) argues that both individual teacher characteristics and collective or collegial factors play a role in this process. Changes come about when practitioners become more confident, critical and articulate regarding why they adopt particular pedagogical strategies in addition to what makes them effective (or not) (Robson and Fumoto, 2009). Fullan (2016) supports this when he describes how teachers develop a shared language of teaching by engaging in frequent, continuous and increasingly concrete and precise talk about teaching practices in addition to observing each other’s teaching and sharing evaluations in an open and receptive environment.

Fisher and Wood (2012) argue that a significant barrier to change is that practitioners may modify new knowledge to fit with existing beliefs and this limits the impact and sustainability of professional development. Colleague support and feedback may therefore be helpful in the co-construction of knowledge (Fullan, 2016). Colleague support may also support the sustainability of the change. Resistance is often seen when people see the change as threatening to their interests or if they feel that their knowledge and skills may not be relevant (Verhulst and Lambrechts, 2015).

Any change project is influenced by different, nested belief systems and although practitioners may be considered to be good and able to be receptive to a reflective model of practice it does not automatically lead to success (Fisher and Wood, 2012). Experienced practitioners have to “unfreeze” a greater history of habits, beliefs and values that are intrinsically linked with the “status quo” (Lewin, 1947). New staff members tend to be more positive about change and about the idea of taking a different direction (Balogun and Jenkins, 2003) and find engaging with theory and practice including critical reflection on their own practice easier. Fisher and Wood (2012) make the case that the ability to critically reflect on their own practice would help practitioners learn and develop which is more likely to lead to lasting change.

Fook (2004) argues that critical reflection can develop possibilities for emancipatory change and Fisher and Wood (2012) also argue that it may sustain transformation in practice. The process of critical reflection involves deconstructing of reality which then allows the practitioner to change the way they perceive the social world and reconstructing their practice (Morley, 2012). Critical reflection is a powerful educational tool that can enable practitioners to understand how discourses and assumptions may operate contrary to our intentions.

Fisher and Wood (2012) argue that processes of professional development, and particularly changing theories, beliefs and practices is complex and demanding of time, commitment and expertise but as Verhulst and Lambrechts (2015) argue, this development process can be seen by participants as highly beneficial. The challenge is to create a meaning of change that each individual practitioner, with varied beliefs, skills and experience, can relate to through their subjective reality and to define and pursue high standards and shared targets (Hargreaves and Shirley, 2009). With this in mind, change must be seen as a process that needs to be managed to allow for the subjective reality of change (Creasy, 2017; Verhulst, 2012).

2.1.3 Lewin's model of change management

This project utilised Lewin's model of change management as it was felt to shape the change process without restricting the implementation process. Fullan (2016) makes the case that effective change processes shape and re-shape good ideas as they build capacity and ownership among the participants. Lewin (1951) described an approach to change as a process of unfreezing, change and refreeze and to illustrate this process he used a block of ice. If you want to change a cube of ice into a cone you have to melt the ice to enable it to refreeze into a cone. Lewin (1951) described the unfreezing phase as dependent on a strong compelling message as to why a change is necessary and to do this you would need to question the "status quo". This will challenge people's beliefs, values, attitudes and behaviour that, can be both difficult and stressful. However, by creating a controlled crisis you can build a new sense of direction as the team will seek a new “status quo”.

Motivation is essential for a successful change and this is the phase where strategies are drawn and plans are made for the change (Lewin, 1951). Carter (2008) argues that the strategy needs to address skills and abilities in addition to just change management theory. Once the change has been established, the refreezing stage starts with a new sense of stability and staff who are confident and comfortable with the new way of working (Lewin, 1951).

According to Kellet (2003), the characteristics of the school will influence the implementation of change and the framework in which the change is being implemented is important to the success of the project. The change needs to be supported formally in school documentation and effective support systems for the change practitioner need to be established from colleagues, management and external educational bodies (Kellet, 2003). Kellet (2003) also says that it is important to consider the individual experience levels of the practitioners as differing levels of confidence, competence and insight, in addition to a consideration of how emotional and historical factors impact on the individual practitioner’s performance, will have an effect on the efficacy of the approach.

2.2 The social model of disability

The legal framework in England defines disability as "a physical or mental impairment which has a long-term and substantial adverse effect on their ability to carry out normal day-to-day activities" (DfE, 2014c; Equality Act, 2010). It is interesting to note that despite efforts to move towards a social model of disability, the medical ideology still underlies this definition.

The term special educational needs (SEN) is distinguished from the term disability and the most recent Code of Practice 2014 specifies that a child will have a SEN when *"he/she has a learning difficulty or disability which calls for special education provision"* (DfE, 2014c). This definition is similar to the definition provided in the previous 2001 SEND Code of Practice (DfES, 2001). This is interesting as it implies that the child does not fit within the "normal" provisions that again focuses on the disability and impairment.

Two core concepts in relation to this project are *disabilities* and *inclusion* and the language we use to describe these phenomena reflects societal views, beliefs and understanding. Disabilities are defined through models of disability and these models are devised by people about other people. Bricout et al. (2004) note that these models refer to a framework of ideas about the causes of disabilities and also indicates the “correct” response to a person’s disability. These constructs give us an insight into attitudes, conceptions and prejudices held by society at a given time and space. This thesis argues that the difficulties experienced by the autistic child is created by disabling environments and furthermore, these environments are often a result of social constructs. The implication of this for the purpose of this thesis is that the adults should support children with autism in environments that are created to facilitate engagement and learning.

There are many different models of disability but to illustrate how they may impact on services, I will compare three models; 1) the medical model identifies disability as a biophysical impairment located exclusively within the individual (Bickenbach, 1993) which indicates that there is a deficit or a flaw with the individual (Hughes, 2000); 2) The social model of disability views the social environment as the primary cause of disability and disadvantage (Corker and Shakespeare, 2006) and 3) the human-rights based model of disability sees disability as an aspect of human diversity and therefore arises from the interaction of individual factors (Quinn and Degner, 2002). It is easy to see how education provisions will vary depending on the values held by the leadership of the institution.

This thesis is framed by the social model of disability (Corker and Shakespeare, 2006) as it argues that a person's individual difficulties are as a result of a failure of the environment to accommodate differences. This model was developed to challenge the medical model of disability that states that individuals should be treated and adapted to fit into a pre-determined and set society (Barnes and Mercer, 2004; Rieser and Mason, 1990) which is a view compatible with the transactional model of child development.

There are critics that argue that the social model of disability ignores the impact of a particular disability (Shakespeare, 2002). However, for the purpose of this thesis it offers a framework for promoting change in which the individual autistic child is regarded as competent social actor in their own right.

2.3 Individual needs and the National Curriculum

The National Curriculum for England was first introduced by the Education Reform Act of 1988. The current statutory National Curriculum dates from 2014 at which point the majority of curriculum subjects were introduced to most year groups across primary and secondary education, however the english and maths curriculum came into force for all year groups from September 2016 (DfE, 2014c). When originally introduced the National Curriculum was claimed to be an equal entitlement for all learners. It aims to provide “an introduction to the essential knowledge they need to be educated citizens”. It could be argued that through the National Curriculum that pupils are being shaped for the future good of the country and may not celebrate diversity, pluralism and respect for human beings as individuals. Critics would argue against the appropriateness of a curriculum for all learners that fails to take into account individual pupils’ autism (Jordan and Powell, 1994). Equal entitlement may lead to a lack of attention to individual needs.

Societal values and beliefs influence the interpretation of concepts and the neoliberal influence on the education system has led to “mainstream” settings becoming the norm and special schools have often been discredited for providing poor quality educational services and maintaining a sense of social exclusion (Baker, 2007; Jordan, 2008) The concept of inclusion has become a matter of “where” rather than “how” (Dudley-Marling and Burns, 2014) and due to the core value placed on “mainstream” settings and general presumptions in law (DfE, 2014a; DfES, 2006), parents view special schools as a last resort for children with severe and complex learning difficulties (Warnock, 2005). There is little acknowledgement of diversity, if you are not “normal” you are “special” and a burden, as the learner with special education needs or disabilities do not fit into the expectations set out by neo-liberal societal views and values (Jordan and Powell, 1995). It is key to offer diverse opportunities to meet the educational needs of all learners.

Children with autism share many commonalities but they present with individual and complex differences and due to this complexity there is a need for a variety of education provisions across mainstream and specialist environments. It is important that this variety of educational provisions does not become a hierarchy where "mainstream" is the goal for all pupils because some pupils with autism find it difficult to access an environment that fails to take into account their specific difficulties that may include anxieties and sensory differences. By offering suitable environments to the pupil with autism, the challenges experienced by the pupil can be reduced to seeing the world in a different way to the neuro-typical, often rigid way of fitting in with societal norms and expectations. It is important to acknowledge that a suitable environment will not eliminate the challenges experienced by a pupil with autism but could reduce these.

Historically, the approach to pupils with autism has been based on the 'medical model' which focuses on the disability as a problem within the person but there is now a shift towards the 'social model' which views the person with autism as an active agent in an inclusive environment (Marshall and Goodall, 2015). Autism may at times be an invisible disability that would require adjustments to the typical approaches of education (Osler and Osler, 2002).

Children with autism share a number of characteristics but the impact on the individual will vary depending on a number of factors including level of learning disability and challenging behaviour. In practice, educational approaches are often designed using components from a variety of interventions (Gabriels et al. 2001; Sallow, 2000; Siegel, 2000; Jones et al., 2008). Humphrey and Parkinson (2006) argue that an understanding and consequent response to a child's autism is the key to effective teaching and Francis (2005) suggests that the key elements in an effective intervention are structural teaching based on visual cues and behavioural techniques.

Howlin (1998) argues that TEACCH is a successful, visually based instructional system that relies heavily on visual cues and the basic components are adapted to suit individual needs. Francis (2005) suggests that TEACCH is an approach that focuses on the "culture of autism" and a population with diverse ways of thinking, learning and experiencing the world, arguing that cognitive differences underpin the autistic symptoms and explain the behavioural problems displayed, the TEACCH approach is about achieving maximum autonomy at all levels.

2.4 Autism

Autism is characterised by differences with social reciprocity, atypical communication skills and repetitive behaviour. A number of children with this diagnosis also display self-injury and hyper or hypo sensitivity to sensory stimulation (Hyman and Levy, 2013). Iemmi et al. (2017) estimated that around 700 000 people with autism live in the United Kingdom and approximately a third of this population are identified as having some degree of learning disability (Baron-Cohen et al., 2009; Emerson and Baines, 2010; Roth, 2010).

Autism is a lifelong and pervasive condition, which presents with a number of challenges impacting on most areas of daily living (Punshon et al., 2009). Autism is a complex disorder characterised by qualitative differences in social communication, social interaction and flexibility of thought and restricted, repetitive and stereotyped patterns of behaviour, interest and activities including sensory difficulties (APA, 2013). It is not a single condition but a spectrum of pervasive developmental disorders that present challenges. It is important to create an inclusive learning environment where it is acknowledged that the problem is not within the child but rather in the child's interaction with the environment (Sheppard, 2000). It is necessary to explore the complexities around autism to gain insights into how this can be achieved.

Autism is a wide-ranging term with a whole spectrum of disability initially described by 'the triad of impairments' (Wing, 1996) and subsequently, this has been replaced in the DSM-V by the "Dyad of impairments" (APA, 2013). To be diagnosed with autism the person needs to have difficulties in accordance with the DSM-V diagnostic criteria as discussed above. Frazier et al. (2012) and Mandy et al. (2012) found that changing the diagnostic criteria from a triad to a dyad increases sensitivity and specificity of diagnosis. Furthermore, the new diagnostic criteria states that someone with autism must show symptoms from early childhood, even if symptoms are not recognised until later. This allows for symptoms to be included that may not be noted until social or cognitive demand exceeds their capacity to perform a task.

Each individual is also affected by the degree of learning disability experienced leading to very complex presentations (Jordan, 2001) and, to add to this complexity, each pupil with autism has unique sensory profiles (Bogdashina, 2003) which is now part of the diagnostic criteria. It is important to acknowledge that autism may impact differently on pupils despite many shared commonalities. Guldberg (2010) argues that any approach and intervention needs to be built on an understanding of autism and how it impacts the individual young person. This indicates a need for an assessment of the child’s needs and it therefore concerning that 42% of parents state that their child was refused an assessment of their special educational needs the first time it was requested (APPGA, 2017).

2.4.1 Child development and autism

Jordan (2013) argues that humans are born with underdeveloped brains and very few instinctive behaviours and Piaget argues that in the sensorimotor stage (birth to the acquisition of language) human behaviour and understanding is progressively constructed by coordinating experiences such as vision and hearing with physical objects (Ginsburg and Opper, 1987). Jordan (2013) makes the case that solitary play may lead to a failure to learn to interact with their emotions which in turn could lead to an inability to predict behaviour of others. Furthermore, she argues that in autism the process of reciprocal interaction is disturbed leading to missed or different and unusual early learning experiences. An understanding of key aspects of typical development may provide a guide on how to provide positive learning experiences for the child with autism and SLD.

Jordan (2013) argues that there are four important aspects of early learning opportunities that are key for the infant's development. Firstly, emotional sharing is developed through shared experiences of emotion and Vygotskij and Kozulin (1986) suggest that a child learns through hands on experiences and social interactions with members of his or her culture. However, Jordan (2013) suggests that as a key feature of autism is great difficulty in establishing empathy with others or in understanding emotions, be it their own or that of others, this learning may be impaired.

Secondly, the turn taking seen in primary caregiver and infant interaction observes the caregiver pausing to allow for the baby's contribution that is treated as meaningful communicative behaviour. Caskey et al. (2011) argue that turn-taking is a precocious human ability which forms the foundation for speech and language development. Oller (2000) found that in the first weeks after birth the infant begins to vocalise and this elicits emotional and motivated responses from their social partners. Gratier and Devouche (2011) found that these responses clearly match the acoustic qualities of the infant vocalisations. Gratier et al. (2015) make the case that if infants partake in co-regulated turn-taking they must have the ability to perceive the contingent relations between their own behaviour and that of their partner. Jordan

(2013) argues that even able people with autism have difficulties in turn taking in conversations as they rarely recognise pauses and therefore often interrupt others. Nor do they utilise pauses to allow others' contribution leading to a monologue in which the conversation partner is talked at, rather than to.

Leading on from the turn taking is the development of an understanding of cause and effect and according to Piaget (Ginsburg and Opper, 1987), this starts to develop in the sensorimotor stage. The caregiver copies relevant actions and expressions building them into meaningful and predictable routines. The infant develops a sense of self as having an effect on the world and becomes able to initiate interaction and respond to the environment. This development of an emotional connection with their own actions and their effect is a precursor to creative and spontaneous actions to control and monitor their own behaviours. Jordan (2013) argues that pupils with autism have difficulties with executive function and spontaneity that makes it harder to develop an understanding of cause and effect. Executive function and self-regulation skills are the mental processes that enable us to plan, focus attention, remember instructions and juggle multiple tasks successfully. A number of brain functions are required and Hill (2004) describes how functions like working memory, mental flexibility and self-control are particularly important for helping children with autism to improve their interactive skills.

An aspect of key early development is the ability to regulate one’s own levels of arousal. If the infant receives too much stimulation he may close his eyes or turn away but on the other hand, if there is too little stimulation the infant tries to increase levels of stimulation by leaning forward or seeking eye contact. Self-regulation refers to several complicated processes that allow children to respond appropriately to their environment (Bronson, 2000) and as children develop, their regulatory skills become more sophisticated (Blair and Diamond, 2008). Galinsky (2010) found that children develop foundational skills for self-regulation in the first five years of their life and the most powerful way of teaching children to self-regulate is by modelling and scaffolding (Vygotskij and Kozulin, 1986). Jordan (2013) makes the case that the development of an ability to regulate own arousal levels does not appear to occur in children with autism.

The described influences on child development point to a complex interplay of both intrinsic and external factors which indicates that both nature and nurture impact on the individual child’s development. In 1975, Arnold Sameroff proposed the transactional model of child development (TMCD) to provide a way through the “nature or nurture” debate (Sameroff, 1975). He argues that the child is existing within an intricate system of variables, all of which could have an effect on their development. Sameroff believed that both nature and nurture are constantly being changed by their interaction with one another. This means that developmental outcomes are a function of neither the individual nor the context alone but both. The TMCD looks at development as a result of a complex interplay between the child and their natural traits and personalities, as well as family experiences and economic, social and community sources. This model is influenced by Vygotskij with its focus on social and environmental influences on child development (Vygotskij and Kozulin, 1986).

The TMCD is embraced by developmental/relationship based approaches to autism in that the child’s communication and social interaction develops through the interplay between nature and nurture and in the context of relationships with others. The developmental/relationship approach to intervention has been adopted by this research as a foundation for implementing II in the school. The child may not initiate communication and engage with practitioners unless this is facilitated by the adult who understands the child’s current level of functioning. As an example, II utilises imitation of the child’s behaviour as a tool to encourage engagement with the adult as it is believed that the child may be discouraged from initiating communication if the adult fails to respond.

The term *inter-subjective* is being described by Trevarthen et al. (1998) as a "mental activity that links feelings, conscious purposes and thoughts of one person with those of another by means of expressive behaviours of all kinds" (Trevarthen et al., 1998, pp. 321). Dant (2015) describes inter-subjectivity as a phenomenological approach "in which one mind has to engage with another for social life to be a possibility, a process in which one mind explores a second" (Dant, 2015, pp. 46). Furthermore, he claims that successful communication occurs through five processes of inter-subjectivity (co-presence, apperception, empathy, the look and communicative interaction) however, he goes on to say that "it is important to note that a problem with the traditional phenomenology is the presumption that all minds, however different they are, work in fundamentally the same way" (Dant, 2015, pp. 53).

Hobson (1993) claims that the difficulty autistic people have with social communication stems from a fundamental inability to respond emotionally to others. His approach recognises that the child develops understanding and skills through "mediated learning" where the communication companion aids this process.

Furthermore, he believes that inter-subjectivity, or emotional responsiveness and self-awareness in relationships, is the bridge that makes communicative companionship possible. Jordan and Powell (1995) advocate an approach that builds on the capacity the child retains for cognitive learning and reflective intelligence, while recognising the importance of interpersonal transactions at every stage (Trevarthen et al., 1998).

Intersubjective engagement and empathy is developed and shaped in the interplay between nature and nurture and in the context of relationships with others which links this phenomenon with that of developmental/relationship approach to intervention. This means that inter-subjectivity is not a constant phenomenon, the importance varies between different cultural groups (Dant, 2015). People with autism have conscious minds and they engage with other people inter-subjectively but they may have difficulties in sustaining communication and finding a shared perspective on the life-world. It is interesting to note that whilst people with autism often find it difficult to understand some of the practices and habits of *neuro-typicals* the same can be said for the *neuro-typicals*. A significant number of the *neuro-typical* population understand very little about the autistic population and often find the practices and habits of people with autism to be strange. The problem that occurs in establishing a shared meaning is experienced by both, Milton (2012) calls this the “double empathy problem”.

This thesis draws upon the transactional model of child development. Wetherby and Prizant (2000) propose that the development of the child can be influenced through the behaviour of the adult and Willis and Robinson (2011) argue that the adult should take the same, or more, responsibility for the success or breakdown of the adult/child communication. Concepts like developmental/relationship approach to intervention and inter-subjectivity has also been adopted.

2.4.2 Severe learning disability and autism

Pupils who are described as having SLD are an extremely heterogeneous group in which each person presents with a wide range of personal characteristics, abilities, strengths and weaknesses (Giangreco, 2006). The term SLD generally implies a significant weakness in learning ability, communication, personal and social skills (Lacey et al., 2015) and they may also have a significant weakness with sensory and physical development (Westling and Fox, 2014). Typically, this would mean that the child develops slower through a predictable sequence of development.

For individuals with SLD and autism their whole developmental trajectory is changed and the complex sophisticated relationships of human interaction are often unable to provide learning opportunities, instead the social responsiveness and reciprocal interaction are missing (Hobson, 2002). Young people with autism and SLD would have significant difficulties with reciprocity and this in turn may act as a barrier to successful relationships. It is within successful relationships that social learning takes place (Jordan and Powell, 1995) which means that young people with autism and SLD will require structured approaches to help them manage social situations and to learn from and relate to others. Zeedyk (2006) argues that the emotional intimacy in the caregiver-infant interaction is central to the development of individual experience and this is disrupted in children with autism as they need the involvement of others to facilitate this process.

The difficulties experienced by the pupils with SLD are of such significance that they require support in all areas of the curriculum in addition to the teaching of self-help, independence and social skills. According to Emerson and Baines (2010) the prevalence of pupils with autism who also have SLD are around just under a half to around two thirds, however, it is now estimated to be just a third of all individuals with autism (Iemmi et. al., 2017).

2.4.3 Challenging behaviour and autism

It is beyond the scope of this project to do a full review of this topic, rather, this is a review of the literature in the context of autism. CB needs to be understood from a variety of perspectives as they all add value to the assessment and understanding of specific behaviours (NICE, 2013). The medical and biological perspective would design very different service provision to the psychological, developmental and environmental perspectives. It is important to acknowledge the interplay between all the perspectives to meet the holistic needs of the individual person with autism. Emerson and Einfeld (2011) argue that individual needs may vary over time which makes assessment a dynamic, on-going process and they also state that interventions should be constructional, functionally based, socially valued and ethical. The assessment also needs to reflect the young person's strengths as they may lead to effective intervention strategies.

Emerson (1995) describes CB as characterised by extreme behavioural challenges which present significant risk to people's physical well-being and it might significantly reduce the access a person has to community environments. The definition and causation of CB is not clear and the causes may also overlap (Emerson et al., 1994). Emerson and Einfeld (2011) argue that this would require a broad ranging assessment that considers potential factors within the individual in addition to potential factors in their environment. It is important to acknowledge that CB may be caused by the way a young person is supported rather than by their own characteristics (DoH, 2007; Hastings and Remington, 1994). Paradoxically, CB may be strengthened and maintained by staff who also are key agents in behavioural interventions to reduce CB (Felce et. al., 2000; DoH, 2007; Hastings and Remington, 1994). Staff training and understanding is key when managing pupils with autism, SLD and CB as there is a link between some challenging behaviours and the difficulties with social participation common to many people with autism due to impairments in functions crucial to this participation (Hanbury, 2012).

SLD and autism may further compound this picture as the pupil may find it difficult to communicate their needs and wants or that they are totally overwhelmed and overloaded with sensory input and subsequently display CB expressing frustration. Studies into the numbers of pupils with SLD who also display CB have been undertaken but they report significantly varying results and varying definitions of CB (Kiernan and Kiernan, 2010; Hogg and Mittler, 1987). CB can significantly limit a person's life experiences and the behaviour may also place the individual or others at risk of significant harm. It is also implicit that such behaviours contravene social or cultural norms or expectations (Emerson, 1995) and it could be argued that challenging behaviour is socially defined (Qureshi, 1994) and as such, it is a social construct that may change over time and space. CB may include tantrums, physical aggression, destructive behaviour and self-harm.

Emerson (1995) argues that as CB may limit the extent of positive life experiences for the individual, it is important to replace some of those behaviours to allow the young person to interact more effectively within their environment. Changes in social relationships may also widen the range of activities and experiences the young person can engage in and enjoy. Behaviour may be challenging in one setting but not in another and the reason for this could be in the environment and as Murphy and Oliver (1987) argue, it is important to modify the environment to avoid CB being inadvertently reinforced. The planned response needs to have a pre-defined purpose; is it to ensure safety, is it to teach new skills or is it about teaching consequences (Clements, 2005). You could also devise an intervention that will achieve a range of outcomes.

2.5 Evidence based practice and pedagogy

The concept of evidenced based medicine arose in the 1970s (Odom et al., 2005) and this is where the concept of evidenced based practice in education has derived from. The criteria for this definition is that methods have been tested using experimental designs producing consistent results (Marder and Fraser, 2012). The aim for this section is to provide the reader with an overview of relevant evidenced-based pedagogy relating to educating pupils with autism.

There is a consensus that the main characteristics of autism are core differences in communication, social development and flexible thinking (Wing, 1996). These differences may lead to the pupil not engaging with others and as such, it may be difficult to offer appropriate and meaningful education. Humphrey and Parkinson (2006) and Guldberg (2010) suggest that the nature of the educational approach and subsequent intervention is dependent on a number of factors including the child's age and the extent of the core deficits typical in autism. The child's strengths and weaknesses must also be taken into account including cognitive ability. To summarise, the educational approach offered to a child with autism must be built on a knowledge of autism in addition to a knowledge of the individual child (Guldberg, 2010; Powell and Jordan, 2012).

Central to the diagnosis of autism, one of the core difficulties is communication. Many intervention studies have focussed upon children's spontaneous communication and the difficulties with initiation experienced by a child with autism (Potter and Whittaker, 2001; Chiang, 2009).

Two broad categories of approaches to develop social communication are outlined following Ingersoll and Dvortcsak' (2006). These are firstly, behavioural and naturalistic approaches e.g. Applied Behavioural Analysis (Dempsey and Foreman, 2001) and Picture Exchange Communication system (Bondy and Frost, 2002) and secondly, developmental and relationship based approaches e.g. Social Communication, Emotional Regulation, Transactional Support SCERTS (Prizant et al., 2006) and Intensive Interaction (Nind and Hewett, 1994; 2005). These two general approaches differ in that the behavioural and naturalistic approaches primarily are about teaching the child specific skills. The developmental and relationship based approaches emphasise the importance of the adult interaction style to facilitate social communication skills by responding to all children's attempts to communicate.

The Adult Interactive Style Intervention (AISI) was developed by Kossyvaki et al. (2012) with the aim of enhancing children's spontaneous communication. AISI was made up of thirteen general principles and nine communicative opportunities. There was pre- and post-intervention data analysis that was contrasted in terms of the initiations for six children across four activities. Three staff participated in the study and Kossyvaki et al. (2012) reported that all staff managed to implement AISI. It is interesting to note that one member of staff found the concept of minimal speech difficult to apply as it was against the way people typically communicate (Kossyvaki, Jones and Guldberg, 2016). Furthermore, the staff reported that in terms of waiting they were "too eager to anticipate what the children wanted" (Kossyvaki, Jones and Guldberg, 2016, pp. 163).

At the post-intervention stage, staff expressed the view that two particular children had improved their ability to initiate communication a great deal. However, the recorded video data did not concur with this as it was considered that the particular children had only made some progress. The overall findings from this study demonstrated an increase in children's spontaneous communication, which suggested that modifying adult style by AISI was effective within this small sample.

Like AISI, II is a developmental and relationship based approach aiming to promote the fundamentals of communication. The approach was developed by Nind and Hewett (2001) and was initially intended for a population of young adults with severe learning difficulties within a long stay adult hospital environment. It has since been researched in different settings (Kellett, 2000; 2003; 2005; Argyropoulou and Papoudi, 2012) and special school classrooms (Watson and Knight, 1991; Barber, 2008; Jones and Howley, 2010) including cohorts of individuals with autism. Like AISI, the II approach requires adults to be observant, available, tuned-in and responsive whilst allowing for pauses and child led interaction.

2.5.1 Evidence based practice and the evidence base for autism interventions

Studies demonstrate how an eclectic approach is widely adopted in the UK when working with children with autism and a range of educational approaches are drawn upon (Gabriels et al., 2001; Sallows, 2000; Siegel, 2000; Jones et al., 2008). Jordan and Jones (1999) found a lack of evidence suggesting that one single approach would work for a majority of pupils and in their seminal work, Parsons et al. (2011) did not find strong evidence to suggest that one type of intervention approach would be better compared with another. They also highlighted a gap in the empirical evidence base relating to older children and adults with autism (Parsons et al., 2011) and as a result, they argue that very little is known about effective interventions for young people with autism, particularly when this is compounded by SLD.

Powell and Jordan (2012) argue that an effective teaching programme should be tailored to individual needs and no one approach can individually tailor to meet this variation. This would mean that pupils with autism would require the curriculum to be tailored to their learning needs and to take into account their unique developmental pathways. Jordan and Powell (1995) argue that as the child with autism has impaired and deviant language and communication skills which could lead to a lack of understanding and inability to develop skills and generalise abilities, they require an approach to education that takes these difficulties into account.

Social development is also impaired and delayed and even if the child is able to learn with others or learn about social events, this learning may not be based on social understanding (Jordan and Powell, 1995). An assumption that learning is a social, interactive process cannot be made and the child with autism may come across as mechanical and rigid. The assumption that the teacher needs to stimulate the child's imagination is also fraught with difficulty as a pre-requisite for the autism diagnosis is a difficulty with their ability to imagine (APA, 2013). The educator's actions and reactions cannot follow the same pattern as expected in typical education settings when teaching children with autism and SLD (Tutt, Powell and Thornton, 2006). Some parents view their child with autism to be presenting totally different difficulties to other learners (Harris, 2008). This view is reinforced by another parent, "Autistic needs aren't subtly different from mainstream needs; they're diametrically opposed. Autism is, above all, a social disability" (Moore, 2002, pp. 1).

2.5.2 Teachers' professional development and use of evidence based practice

It is a hugely challenging task to educate pupils with autism and SLD due to their individual complexities, their uneven cognitive profiles and different developmental and learning patterns. It is unlikely that traditional teaching methods will be effective indicating a need for specialist teacher interventions and knowledge (Batten et al., 2006). Jordan and Powell (1995) argue that what is required is teaching staff who are highly skilled, trained and qualified and who have the resources to provide the pupils with individual support and attention to enable them to make progress. However, children with autism are frequently allocated one to one support staff members who are often untrained (Jordan, 2008; Harris, 2008).

The National Autistic Society (NAS) advocate that all teachers develop autism awareness and skills in teaching these pupils (Barnard et al., 2002) as teacher training is crucial to the successful education of children with an autism (English and Essex, 2000; APPGA, 2017). Barnard et al. (2002) found that 72% - 82% of schools were dissatisfied with the extent of teacher training and they felt that additional training would enable the school staff to identify the needs of individual children. ACCAC (2000) make the case that certain criteria must be fulfilled to successfully educate pupils across the autism spectrum. The key areas are; gaining attention and motivating pupils; promoting social communication and social interaction; structured teaching and behaviour management.

Educators make assumptions and predictions as part of their daily practice but these cannot necessarily be made when working with pupils with autism (Jordan and Powell, 1995). Jordan and Powell (1995) go on to say that autism is a complex disorder that requires a context of education where normal templates for teaching and learning cannot be applied. Hodapp et al. (1998), Parsons et al. (2011) and APPGA (2017) agree that a pupil with autism and SLD need special consideration when identifying an effective educational approach.

The practitioners in this study are all teachers or TAs that have an understanding of their daily environment which is important (Fullan, 2016). As autism is a complex disorder it is quite clear to Batten et al. (2006) that specialist teacher interventions and knowledge is required. More than five in ten teachers in mainstream schools report that they do not have the necessary skills and training to support pupils with autism (Robertson, Chamberlain and Kasari, 2003; APPGA, 2017) and teachers positioned the TAs as the expert on the child with SEN despite the TAs having similar weaknesses in terms of training and knowledge (Webster and Blatchford, 2013; 2014).

Lack of training and knowledge could lead to pupils needs not being effectively met, creating a forced segregation or isolation of pupils with autism (Jordan, 2008). Teachers identified a lack of training and there is no established tradition of specialist education for teachers of SEN in initial teacher training (Hodkinson, 2009). However, The Children and Families Act (DfE, 2014a) introduces a greater emphasis on the role of specialist knowledge for teachers and other care professionals working with children with SEN (Mintz and Wyse, 2015). Despite the legislation outlining the reformed special educational needs system, there have been many difficulties with how these have worked in practice. The All Party Parliamentary Group (APPGA) carried out an inquiry in 2017, called "Autism and Education in England 2017" (APPGA, 2017). In the report, they state;

> "…. The problems children and families face remain in many ways unchanged". "…. too many families face an uphill struggle to obtain the help and support which their children are legally entitled to" (APPGA, 2017, pp. 6).

Some of the findings from the survey include; 40% of parents say that their child's needs are not fully met in school, fewer than five in ten teachers say they are confident about supporting a child with autism and fewer than half of the children say they are happy at school. Six in ten young people (and seven in ten parents) say that the main thing that would make school better for them is having a teacher who understands autism (APPGA, 2017).

Osler and Osler (2002) argue that for some impairments a level of understanding of the condition a child has, in addition to how that might impact on the child's aptitude for learning, makes a significant difference to meeting the needs of these children. Contrary to this, many children with autism who are hard to engage are staffed with one to one unqualified staff members (Webster, 2014). Hargreaves and Shirley (2009) believe that prior knowledge, culturally responsive pedagogy and problem based learning highlight how to connect learning from the past with the future. They believe this can only be achieved through employing high quality teachers who can only be developed through training and by giving the teacher structured opportunities to explore the challenges of their practice through thoughtful exchanges in which the details and techniques can be analysed and reviewed (Hargreaves and Shirley, 2009).

Teacher professional development is defined by Guskey (2002) as: "systematic efforts to bring about a change in classroom practices of teachers, in their attitudes and beliefs, and in the learning outcomes of their students" (Guskey, 2002, pp. 33). Historically professional development for teachers was delivered through a training event where an 'expert' came to deliver subject knowledge. This kind of traditional model was described as a causal chain by Clarke and Hollingsworth (2002) whereby a training event would then lead to a change in beliefs and knowledge that would translate into changes in teachers' classroom practices and in turn lead to changes in student learning. Clarke and Hollingsworth (2002) and Guskey (2002) argue that this causal chain method does not often lead to anything more than surface level change of improved awareness and knowledge.

Other models of professional development have focussed on the ‘recipients’ of the training as reflective practitioners who experience opportunities to share practise and develop expertise in a supported environment. Guskey (2006) developed an alternative method describing three key outcomes following a training event; a change in classroom practice, leading to an increased understanding of pupil learning which would then result in a change to teachers attitudes and beliefs. Guskey stresses that the experience of successful implementation that changes teachers’ attitudes and beliefs is the most crucial factor (Guskey, 2006).

Clarke and Hollingsworth (2002) described the interconnected model of teacher professional growth that is not a linear model but one which is complex and fluid and has links with the theory of learning. Two significant processes which facilitate change are described as firstly, ‘enaction’ which is the putting into place the new practice and secondly, ’reflection’ which is the ‘active, persistent and after careful consideration’. This model from Clarke and Hollingsworth (2002) shares some of the features from Kolb’s model of experimental learning (1964).

More recent models of teacher professional development have moved on from a deficit model where an ‘expert’ trained teachers to fill in their missing knowledge. The move has been more towards ‘empowerment’ models or those ‘where teachers identify and act on their own needs’ (Mushayikwa and Luben, 2009). Garet et al. (2001) suggested study groups or mentoring and coaching are more likely to make connections with the classroom teaching and may be more responsive to how children learn.

Reflective practice has often been viewed as an integral part of professional development of educators (Bolton, 2010; Ghaye, 2011). Hayden et al. (2013) state that both teachers and professional development providers should prepare teachers to reflect on their own practice. Galea (2012) considers reflective teaching to be an effective tool in the teaching and learning process, therefore teachers would be enabled to amend their practice to pupils needs. Importantly, this compliments the seminal work conducted by Schon (1983; 1987; 1992) who described three types of reflective practices; reflection-in-action, reflection-on-action, and reflection-for-action.

Reflective practice is a key characteristic of excellent teachers (Kane et al., 2004) and is seen to have many potential benefits such as enhanced capacity for change, the ability to deliver transformed practices and positive relationships with those involved in the reflective processes (Kahn et al., 2006). Reflective practice can also promote learner outcomes and social interaction (Kidd et al., 2008).

Hattie (2009) found that there is a big difference between surface learning (information) and deep learning (thinking and understanding) and although he respects surface learning as necessary, he argues that deep learning must be developed in order for individuals to understand the world. Fullan (2016) and Hattie (2009) state that most teachers never develop deep learning capacities and assessments of professional learning repeatedly find that what is learned is not well implemented. Fullan (2016) adds that it is important to counteract false clarity where individuals may think they have changed but have only captured some superficial aspect of the learning. Stigler and Hiebert (1999) found that teachers can misinterpret reform and although they may change surface features their basic approach to teaching remains unchanged. Fullan (2016) adds that teachers may even do the sessions as described but still fail to achieve the goals as the *behaviour* failed to achieve a change in the teacher's *beliefs*. Oakes et al. (1999) found that teachers often rush to adopt new structures and strategies without considering the deeper implications which often leads to failed attempts of change. Fullan and Quinn (2015) make the case that it is important to be precise without being rigid and it is key to ensure clarity throughout the implementation process.

2.5.3 Teaching assistants

TAs are increasing in number and in 2009 it was estimated that they make up more than a quarter of the entire school workforce (DCSF, 2009). In 2009, the Deployment and Impact of Support Staff (DISS) project was funded by DCSF to consider how TA's were deployed and also to analyse the impact of support staff on teachers and pupils. The report measured three main areas of impact; firstly, in terms of positive approaches to learning, secondly in terms of academic progress and finally in terms of supporting pupils with SEN.

In terms of positive approaches to learning areas such as confidence, motivation and relationships with others were considered. There was evidence to suggest that pupils in year 9 benefitted from the TA support whilst for other year groups there were little evidence. No positive effects were reported on the pupil's academic progress and the TA's support was in some cases even reported to impact negatively. The highest level of TA support was often deployed to SEN learners who were seen to make less academic progress. This needs to be balanced against the fact that these learners have the highest level of learning needs (Webster et al., 2010). It was reported that TA's experience and qualifications are often at a lower level as there is no minimum entry criteria for TAs.

Webster and Blatchford (2013; 2014) found that high level of TA presence was at the expense of interactions with both teachers and peers. It is important to note that more TA support does not equal "needs met" as often the high level of TA support led to a lower quality pedagogical diet (Webster et al., 2010; Webster, 2014). The new Code of Practice (DfE, 2014c) does not have many references to the TA and the focus is on the teacher having the responsibility and accountability for the progress and development of the pupils, even if they are supported by TAs. This may change the high level of responsibility many TAs have for making moment-by-moment pedagogical decisions.

Webster et al. (2010) described how teachers are more likely to promote thinking and cognitive engagement in a task whilst TAs are more likely to prompt pupils with a focus on task completion. Another key difference is that teachers are likely to have planned the pupils learning whilst the TA is more likely to be reactive, responding to the immediate needs of the pupil.

The DISS report highlighted the need to reconsider the role of the TA, pointing out that the pupils with the highest level of need should have greater access to teachers as the professionally trained and legally responsible for the pupils learning (Webster et al., 2010). The interaction styles were found to be different between TAs, who were described as "closing down" the talk as opposed to teachers, who were described as "opening up" the talk (Radford, Blatchford and Webster, 2011).

There is clearly a need to consider the quality of support in terms of pedagogical input versus quantity of support in terms of TA hours when educating pupils with SEN. The teacher is, according to the new Code of Practice (2014c), responsible for the pedagogical input for all pupils whilst the TA is there to support this. The TAs are a resource to be invested in by developing their knowledge and skills in interacting and supporting pupils in a way that promotes independence, however, their input should be supplemental to avoid the need for them to have to make pedagogical decisions that they are not trained to make (Giangreco et al., 2005; Giangreco, 2009).

it could be argued that both teachers and TAs have a collective gap in their knowledge concerning the teaching of pupils with a SEN, neither having the training or full understanding to support pupils with SEN (Lamb, 2009; Anderson and Finney, 2008; Norwich and Lewis, 2001). However, in relation to pupils with autism and SLD this supplementary role could include developing the pupil's motivation to engage with others which is a pre-cursor to learning. Training of the TA is essential in addition to teacher oversight and support to make this effective in meeting the pupils needs (Webster and Blatchford, 2013; 2014).

2.6 Theoretical background of Intensive Interaction

Intensive Interaction (II) is a particular approach to educating pupils with autism, SLD and CB in which engagement and reciprocity is developed through interaction and rapport. According to the II institute a one-day training course should prepare and enable the practitioner to implement II (Hewett and Nind, 1998). This is the approach implemented into the school with a view to explore and understand the process of making a change in a particular educational setting.

Humphrey and Symes (2011) found that pupils with autism and SLD may actively avoid contact with others and the purpose of the CB in this setting may be to stop people getting in the way of the activities the pupils are comfortable with. However, as an ability to engage in reciprocal communication and social interaction are pre-requisites to learning the aim is to develop both participatory social inclusion and communicative skills (Nind, 1999). II is about two people finding common ground and a communicative approach where both participants explore each other's preferences and interests on a basic level. In essence, II is based on the early interactions that occur between a primary caregiver and an infant.

2.6.1 Intensive Interaction and Autism

Children with autism have difficulty reaching certain developmental milestones associated with the development of social communication skills and social interaction. II employs naturalistic processes seen in infant/caregiver interactions (Nind and Hewett, 1994), and as it targets core developmental areas rather than extrinsic behaviours, it is classed as a developmental intervention (Fleming, Hurley and Mason, 2015). Interactive interventions have been recommended by some government papers (Mansell, 2010; DoH, 2009) and the NICE guidelines, although not directly recommending II, advises that play-based strategies to increase joint attention, engagement and reciprocal communication should be considered (Donnelly et al., 2015). The guidelines go on to say that the approach should be adjusted to the child's developmental level and practitioners should be sensitive and responsive to the child's patterns of communication and interaction (Donnelly et al., 2015). The evidence base for the approach is currently modest but growing (Goldbart and Caton, 2010) and despite an increased recognition of the approach as a helpful technique, there is limited empirical evidence to support the powerful claims made by authors and anecdotal reports from II practitioners (Hutchinson and Bodicoat, 2015).

The fact that II employs naturalistic processes could be a limiting factor as staff may perceive the approach as "nothing new" and "something we do anyway" (Firth et al., 2008). This may lead to a perception that the approach is ineffective and cause initial doubts around the implementation (Zeedyk et al., 2009). A varying level of acceptance by the staff of the changes necessary may make the implementation difficult (Donnelly et al., 2015). On the other hand, the naturalistic processes employed could be a driving force as it is a skill that the staff may find quite natural to engage with. Initial training and on-going support and opportunities to reflect on practice are important factors in the successful implementation of II (Donnelly et al., 2015).

II may involve building a relationship with a partner through using and adjusting interpersonal skills such as gaze, voice, body posture and facial expression (Nind and Hewett, 1994; 2005). By encouraging, modelling and eliciting a response from a less skilled partner a two-way communication process can be enabled. During this interaction, the child learns not just the fundamentals of communication which include getting a response and responding to behaviour, reading and using facial expressions and body language and turn taking, but ultimately that other people are good to be with (Caldwell, 2006). This early social skills development can result in the pupil experiencing interaction with other people as positive which may lead to a very basic level of sociable behaviour. Without some of these fundamental skills it could be argued that it is very difficult for any other learning to take place.

In the II literature, there is a great deal of listing and description of techniques or key features that may be seen in II (Firth et al., 2010; Firth and Barber, 2011; Nind and Hewett, 1994; Caldwell, 2006; Mouriere and McKim, 2018). These descriptors are often used in a non-sequential way to demonstrate techniques that may be seen in practice when engaged with a partner. A framework for interactive style and practice as part of a three-tier policy (Kellett and Nind, 2003) provides a description of practitioner behaviour and there is also a proposed framework from the QCA (2009) that underpins the P-levels with hierarchical descriptors that recognise pupil attainment. This framework also forms the basis for other recording and observation schedules for recognising II skills is further defined (Firth and Barber, 2011).

2.6.2 Intensive Interaction and challenging behaviour

II has been noted to reduce CB and ritualistic behaviours (Nind, 1996; Caldwell, 2006) by replacing the CB with more appropriate and positive interactions and as a result the pupil is supported to develop and establish positive relationships with people around them. One of the strengths of the approach is the attempt to develop positive relationships with others as relating to and understanding the behaviour of others will help the child with autism to learn about themselves.

II is an approach that is particularly suited to pupils with autism and SLD as the starting point is very much taken from the learner assuming no prior knowledge or skill. As described by Firth et al. (2008) Intensive Interaction is a "...socially interactive approach to developing the preverbal communication and sociability of people with severe or profound intellectual disabilities" (Firth et al., 2008, pp. 58). It is also important to note that it is not the outcome of the interaction that is important when delivering II, success in II is in terms of the level of participation in the process of engaging with another person (Firth and Barber, 2011). It is therefore acknowledged that II is not an objective-based approach rather the focus of II is on the process of developing an ability to become active participants within a social environment (Hewett et al., 2015).

The literature evidences little about the effectiveness of Intensive Interaction in pupils with autism, SLD and CB who are working within the lower P levels. Also, if it is the case that the dilution of approaches reduces its effectiveness (Mesibov, 1998) it would be interesting to explore the effectiveness of an approach delivered in its own right. There is a need for more evaluative research on Intensive Interaction as the uniqueness and individual complexity of the pupils would make them unsuitable for large scale research projects (Kellet and Nind, 2003). Although the focus of this research is on the implementation process, certain aspects in relation to outcomes and success will either serve as a driving force or a restraining factor. The staff need to be supported to see the benefits of the approach both in terms of the child meeting developmental milestones and the child's preference of spending time in other-directed rather than self-directed activity (Nind and Kellett, 2002) leading to a shared connection with the staff (Berry et al., 2014).

2.7 Summary of literature review

This summary of relevant literatures has focused on change and professional development in a specialised educational context with a view to informing the process of implementing II. The chapter began with and overview of the human factors involved in a change process, including a discussion around subjective realities of practitioners and developing a shared language of pedagogy. This overview highlighted that individual practitioners will have an impact on the implementation process and consideration needs to be given as to how to support this. This led to a discussion of Lewin's model of change management. Next, various models of disability were discussed. This demonstrated how different models would impact services differently. It concluded by placing this project within the social model of disability.

This led on to a discussion in relation to individual needs and the National Curriculum and due to the specific needs of an autistic learner, this was discussed in detail. Concepts related to challenging behaviour, social communication, inter-subjectivity and enabling environments were investigated in some detail and this discussion concluded that the transactional model of child development would be an appropriate theoretical framework to base this thesis on.

This chapter also reviewed and discussed the evidenced based practice and pedagogy, firstly investigating the evidence base for autism interventions. Concepts like behavioural/naturalistic and developmental/relationship based approaches were discussed in addition to professional development and training. This section concluded that the practitioners experience and skills is very important when teaching autistic pupils. The last section of the literature review investigated the theoretical basis for II with a particular focus on autism and challenging behaviour. This section concluded that II may have positive impact on the development of the autistic pupil with SLD and CB.

Taken as a whole, the information presented in the literature review supports the importance of a varied response to teaching autistic pupils and also suggest that the practitioners skills and professional development plays a major role in this.

Chapter 3: Methodology

The purpose and aim of this research is to evaluate and understand the process of implementing a new approach, namely II, within a special school in the North West of England. II was selected to offer appropriate and meaningful education to a group of pupils who, due to the impact of their autism and SLD, are considered hard to reach. The chosen research design is a mixed methods case study that consists of embedded 'units' of dyad pairs of a pupil and either a teacher or teaching assistant and a whole school 'unit'. These units together form an embedded case study (Yin, 2009; Punch, 2009) of the implementation of II into this particular specialist school. The purpose of this chapter is to explain the research design and methods that will be utilised to answer the research questions.

This chapter is organised into seven sections; 1) Research Methodology, 2) Case Study, 3) Participants, 4) Data collection tools, 5) Insider Researcher, 6) Ethical considerations and 7) Data analysis.

3.1 Research aims and questions

The overarching research aim was to evaluate implementation of II in a specialist school setting. This was to be within the context of a specialist autism school with pupils with SLD and CB. From this aim the primary research question was formulated:

> *What are the important factors to consider when instigating a change in teaching practices in a special school in the UK context?*

From the main research question three specific research questions were identified:

d) *How do staff members' skills, abilities, interests and backgrounds influence the change process?*

e) *How does the staff team respond to, and utilise, the training?*

f) *What factors contribute to the embedding of the "new" teaching practice?*

This project utilises a pragmatist, practitioner research approach with an interpretivist epistemology.

3.1.2 Research Methodology

Given that my study sets out to understand both school and classroom level implementation of II within individual learners, I needed to use research methods that would give a broader overview of the process as well as rich, close-up insights into the ways in which II worked. A qualitative methodology would provide the depth of insight required to answer the research questions. The research would be carried out with prolonged contact within the real-life situation so that naturalistic observations could be made within the typical context (Bryman, 1998).

The chosen methods allowed for the collection and interpretation of the individual's perception of their experience (Harding, 2013). The research design is an evolving process and my methodology allowed a flexible and fluid approach (Matthews and Ross, 2010). The research aims to understand each unique classroom case in relation to the school implementation of II but I hoped to be able to generalise the findings (Lincoln and Guba 1985; Eisenhart and Howe, 1992). Research close-to-practice brings insights but also risks of subjective bias (Sikes and Potts, 2008). It is therefore necessary to triangulate the findings to ensure the analytical process is as objective as possible.

Quantitative methods can quantify a phenomenon and identify broader patterns and trends, for example perceptions and views across a whole school community. I therefore used some quantitative methods to complement the largely qualitative approach employed within the project (Punch, 2009). This multiple method design was utilised as one type of data would be insufficient to answer the different questions (Creswell and Plano Clark, 2007).

3.2 Case study

Yin (2014) defines a case study as research that investigates a contemporary phenomenon in-depth in its real-world context. This approach allows for the gathering of data that is rich and thick in description (Geertz, 1973; Cousin, 2009) and by capturing this detail the component parts are then considered together to create an understanding of the whole picture, see Figure 1. The suitability of using a case study design is described by Yin (2014) as being appropriate when the research is exploratory in nature and is concerned with the "how and why?" questions. According to Simons (2009);

> "Case study is an in-depth exploration from multiple perspectives of the complexity and uniqueness of a particular project, policy, institution, programme or system in a 'real

> life' context. It is research-based, inclusive of different methods and is evidence-led. The primary purpose is to generate in-depth understanding of a specific topic (as in a thesis), programme, policy, institution or system to generate knowledge and/or inform policy development, professional practice and civil or community action" (Simons, 2009, pp. 21).

Yin (2014) emphasises the fact that case study is an appropriate research strategy when the research involves "an empirical investigation of a particular contemporary phenomenon within its real-life context using multiple sources of evidence" (Yin, 2014, pp.136). Stake (2005) highlights that the more individual and unique the area of interest the greater the justification for utilising case study design and that sometimes researchers focus upon scientific generalisations however, it is important not to lose the detail of individual cases.

Stake (1994) suggested two different types of case. Firstly, the intrinsic case study in which the purpose is not to generalise but rather to understand the unique complexity in its entirety. Secondly, the instrumental case study focuses on the atypical case and the purpose of this is to understand why this case is so different.

Criticisms of the case study approach focus upon lack of generalisability and bias (Thomas, 2016; Yin, 2014). Denzin (1993) argued that generalisation would not necessarily be the objective in all research, including case study. In order to respond to some of the criticisms of lack of scientific rigour and generalisation of findings the researcher can adhere to a protocol that can guide the researcher through the case study approach.

Yin (2014) states five key components of research design that are important and these factors will be considered throughout the project and are acknowledged in the process of this research. A case study approach is flexible enough to explore the influence of the interactive interventions on a pupil’s social behaviour over a period of time (Yin, 2009). This fits with a case study of the implementation of an II intervention within the context of a specialist school (Figure 2). In order to fully analyse the implementation process as a whole, a varied data set is needed. The use of differing data generation methods helps to build a comprehensive picture of each case (Yin, 2014; Denscombe, 2010; Bryman, 1998) and this rigorous approach when gathering data contributes to the overall understanding. Flyvberg (2006) highlights the flexibility within the case study design that makes it particularly suited to exploratory research.

The specific design of this case study is an embedded design (Punch, 2009) (Figure 2); this is where one data set plays a supportive secondary role to a study based primarily on the other data type. The individual units form an integral part of the case, in this sense related to the implementation process of the research context. The rationale for designing the study in this manner is that each unit contributes to a wider case, the case of implementation within the school.

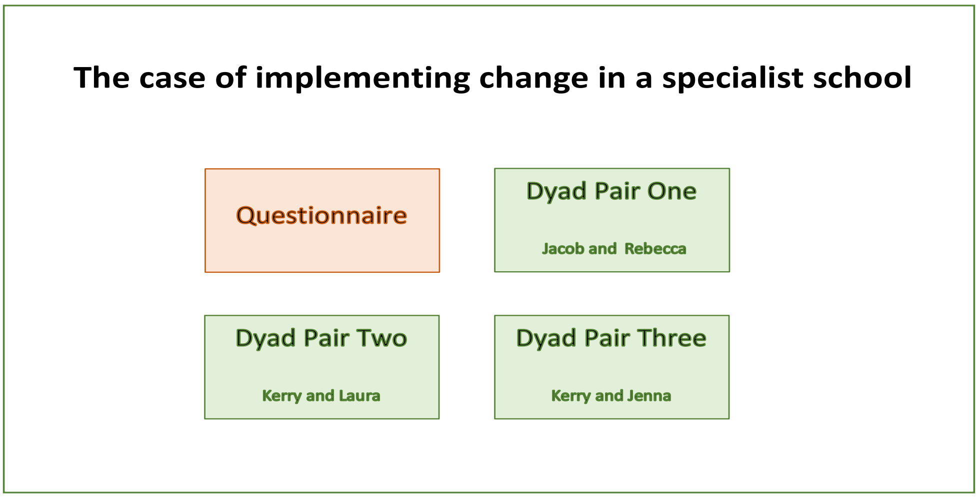

Figure 2: Embedded Case Study Design (Punch, 2009)

In order to understand the implementation at a greater level of depth there are dyad pairs within the embedded case study design and a single whole-staff unit collecting data from the training process and use of questionnaire data (Figure 3). The exploration of these units is designed to give a further level of insight and analysis to explain the case of the school in relation to the implementation of II. In this way, the research design presents as an embedded (Yin, 2009) case study, which shows the clear relationship to the implementation case by utilising the units to examine the research questions.

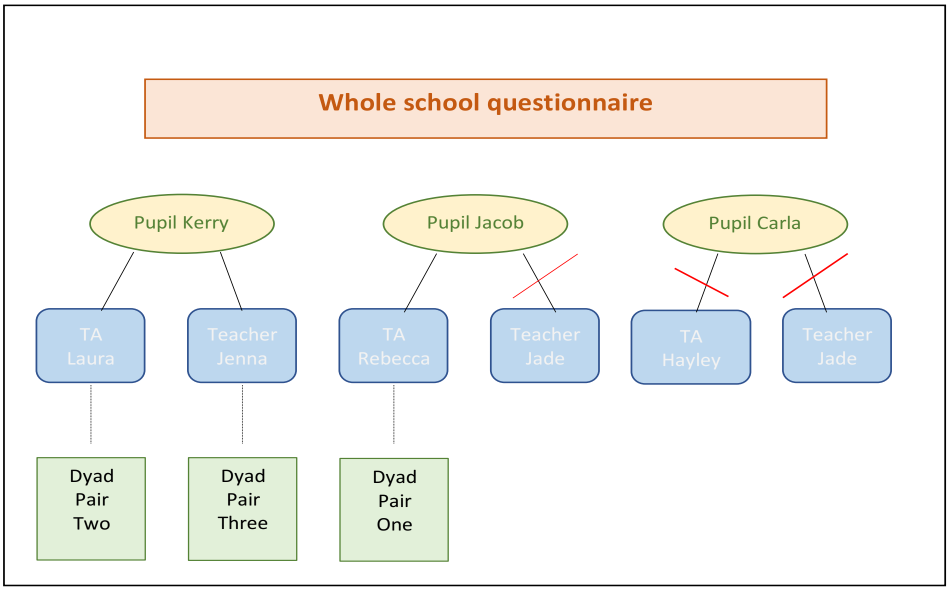

Figure 3: The initial design; embedded units, data sets

In order to establish rigour within this case study design it is important to consider validity and reliability at both the design stage and throughout (Robson, 2011). Yin (2014) highlights four criteria for judging the quality of research designs and these a) construct validity b) internal validity c) external validity and d) reliability. II will now be considered in relation to this case design.

To address the issues around *construct validity,* data collection methods need a clear 'chain of evidence' (Yin, 2014) with 'multiple sources of evidence'. In addition to well designed and archived data generation processes, I also kept a research journal throughout. This was used to reflect on, and critique, my research process including any subjective bias (Robson, 2011).

Internal validity is a central consideration to ensure the researcher is being true to the data and not imposing any pre-conceived ideas during analysis and interpretation. Yin (2014) suggests the researcher considers 'explanation building' and 'addressing rival explanations'. This would include acknowledging and accounting for abnormalities within the research data to lead to a more detailed analysis (Robson, 2011). Triangulation can also support this evidence gathering from multiple sources to consider the various data sets in this case (Robson, 2011).

Issues of internal validity within this research were considered as detailed below:

- Transcripts from the VSR sessions were emailed to participants to ensure that in the typed version they had been represented correctly and that is what they intended to say.

- The analysis of data was considered extensively through research supervision to give a challenge and another perspective on themes and sub-themes that emerged.

External validity is a critique of case study. Whilst the case study approach is suited to collecting data on small sample sizes the challenge can come when generalising to a larger population (Flyvberg, 2006; Stake, 2005). The tools used to gather, analyse and interpret data can assist with demonstrating *reliability* within research (Robson, 2011). This can be enhanced by 'developing a case study protocol' (Yin, 2014) so that another researcher would be able to follow the same procedures to conduct the same study again and arrive at the same findings. Within case study research reliability is improved by keeping a detailed account of research activities in a research journal.

3.3 Participants

In order to understand the implementation of II, the individual embedded units had to be carefully selected to explore the research questions. In the selection process, six pupil-teacher/TA pairs were identified as potential participants from the overall school cohort of twenty-four pupils (Figure 3). The selection criteria used for the pupils were those who were making very limited progress with the current interventions available in the school. The three pupils reported herein were aged twelve, fourteen and fifteen years old, there were two females and one male pupil. All three pupils had diagnosis of SLD, autism and had a range of complex CB. The pupils' current educational levels of functioning were within the very low levels on the 'P' Levels (QCA, 2001; DfE, 2014b) between P2 and P4.

The selected participants were the only pupils in the school that fitted this particular set of criteria. This is significant in terms of an II approach that aims to encourage social communication in pupils who experience SLD and communicative impairments. Other pupils in the school who are achieving higher levels of educational attainment could access other interventions, for example, if they were able to recognise and use symbolic representation they would access the TEACCH educational approach. In this sense, the pupils that have been selected for the cases are particularly vulnerable and could benefit from the implementation of an II approach, as their level of ability does not make them suitable for alternative interventions. The pupils selected could all be described as difficult to reach and have limited skills in relation to the fundamentals of communication (Nind and Hewitt, 1994). The selection criteria as described here is to determine suitability for II however the project has wider applicability in terms of the implementation of a suitable educational approach in other settings.

Two of the pupils that were selected for the project had been in the school for the proceeding three years. An additional pupil was included during the planning phase of the project when she joined the school due to her displaying a similar profile, which was considered suitable for an II approach. I now present the three pupils included in the project, pseudonyms have been given to protect the participant's identity within the data set in line with ethical considerations.

3.3.1 Carla

Carla is non-verbal and conveys little desire to interact with others. Her spontaneous form of communication tends to be challenging behaviours to express her needs. The staff members interpret these behaviours to identify what Carla wants. The communication approach that staff adopt with her is objects of reference, using the actual item or representation of it to support receptive communication, but Carla is rather a passive participant during this exchange. For example, if Carla was going to the dining room she would be handed a plate to represent this location. Carla's level of language is still emerging and object associations are still developing. She typically engages in her own world through participating in stereotyped ritualistic routines that include clapping and rhythmic body movements.

Carla's level of developmental ability is uneven and she presents as having a 'spiky profile' as described by Jordan and Powell (1995) as relating to inconsistent skill levels. For example, Carla has acquired the skill of walking, which would typically develop at between eight and eighteen months, however, her communicative ability is significantly lower and has been assessed at a three-month level. It is useful to utilise the typical developmental trajectory as without this comparison it could be difficult to comprehend Carla's communicative profile. In terms of SLD this pupil functions at the lowest end of the P-levels. Carla's CB consists of hair pulling, biting, scratching, kicking, stripping and self-injury, another significant CB is pica (eating of inedible objects), which requires a very high level of supervision.

3.3.2 Jacob

Jacob, has been at the school for three years and he resides within a children's home as part of the school provision in a placement for fifty-two weeks a year. Jacob's spontaneous form of communication is also his behaviour that can be very challenging. The staff interpret this behaviour to ascertain what he wants. They have adopted objects of reference to aid his communicative understanding and he has developed an awareness of a limited range of motivating objects of reference including shoes and a dinner plate and he will at times use these references to express his wishes. Jacob spends a significant amount of time engaging in stereotyped body movement of rocking and loud vocalisations. Most of the day he will spend time self-restraining using blankets and clothing, which he twists around his wrists apparently to provide his body with deep pressure (Lane et al., 2010). Jacob displays unpredictable behaviour; he can present with intense self-injurious behaviour and CB towards others and his environment. His academic functioning as guided by the P-level scores are within the very low range and he too presents with an uneven cognitive profile. Jacob requires constant supervision throughout his waking day due to his significant CB of pica.

3.3.3 Kerry

Kerry, had just begun her placement in the school at the time the project commenced. She had transferred from another specialist placement where she had spent long periods of the day withdrawing from others in a 'Safespace', i.e. a zipped, padded environment that provided low stimulation and protected her from her intense self-injurious behaviour. Kerry's spontaneous form of communication was through her behaviour that could present a challenge to the staff when trying to identify what she wanted. The plan was for the staff to adopt objects of reference to build some association to help the communication process. However, Kerry was operating within the lower end of the P levels and the challenge for the staff was to engage her as she had become used to isolating herself throughout the majority of the day. The self-injurious behaviour required a minimum of 2:1 staff ratio to ensure that Kerry was kept safe and at times of CB there was a potential risk to the staff when they intervened.

3.3.4 Teachers and teaching assistants

As a result of the selection of the three pupils, key staff members were then identified to take a lead role within this project. Each pupil's teacher was included, one teacher '*Jade*', was responsible for both Carla and Jacob and '*Jenna*' was the teacher responsible for Kerry. Both Jade and Jenna had similar profiles:

- *Jenna* is a qualified special educational needs teacher. She had been in her current post for three years and had fourteen years' experience working with pupils with autism and SLD.

Jenna has a postgraduate qualification and a strong commitment to professional development.

- *Jade* is a qualified special educational needs teacher. Jade had been working in her current post for six years and has seventeen years' experience working with children with SLD and autism. She has postgraduate qualification and a passion for self-development.

Each pupil has a lead TA who was involved in the project. The three TAs provided on-going consistency during the implementation of II with a particular pupil. The TA profiles were varied and included:

- *Rebecca* - a TA who had been in post for fifteen months. This was her only experience supporting pupils with SLD and autism.

- *Laura* - a TA who had been in post for eight months and this was the only experience she had with pupils with SLD and autism.

- *Hayley* - an experienced TA, who had been in post for twenty months. Hayley had extensive experience and had worked with pupils with autism and SLD for twelve years.

Following the identification of the three pupils, the participating teachers and the staff, both teachers and TAs were invited to a presentation about the project. The teaching staff had already provided feedback as part of the service level review in terms of individual pupil's engagement, attainment and social skill development and this formed the initial part of the presentation. I provided further information to all the staff as to how this project emerged and why these particular pupils were included and why the intervention of II had been selected. The staff were keen to participate in the project and were excited to try a new approach they were provided with consent forms and an information sheet to sign. Alongside the above identified staff the remaining teachers and TA team of staff were also trained in the intervention of II and completed questionnaires at three stages in the process to gain a wider insight of II's implementation, this involved nine further staff members.

There was a case that ended up not being used in the study (Figure 3). This was for the pupil Carla and included both the teacher Jade and TA Hayley. The decision not to include Carla was due to methodological and practical difficulties faced when obtaining the required video data. In terms of the dyad pair Jacob and Jade the collection of this data ceased due to the long-term absence of the teacher.

3.4 Data Collection Tools

The data was generated throughout a six-month period and analysed during and following the data collection phase (Figure 4). From the embedded units within this case there were two distinct types of data sets: 1) questionnaires which were completed by all staff members who undertook the training and 2) rich video-recorded observational data and stimulated recall data from each of the dyad pairs. The questionnaire data was designed as a broader method of data collection to capture the views of the wider staff team following a training course, these were collected at three points in time.

Timeline for implementation

Week	Data tool	Engaging with data	Dimensions of change (Erwin & Garman, 2010)
1	**Baseline videos;**	**Video stimulated recall 1**	** Measure cognitive, affective and behavioural aspect of change (VSR, *Yinger, 1986*)
2	Weekly		
3	5 minutes in length		
4	6 participant pairs		
5		**Video stimulated recall 2**	
	Questionnaire 1	14 completed questionnaires	Measure cognitive aspect of change
End of term, 2 weeks			
	Training by G Firth (Associate trainer at the II institute)	Training attended by 14 people; 4 teachers and 10 teaching assistants	Supporting the cognitive aspect of change.
	Questionnaire 2	14 completed questionnaires	Measure cognitive aspect of change and effect of training
1	**Intervention videos**		
2			
3	Weekly video	**Video stimulated recall 3**	** Measure cognitive, affective and behavioural aspect of change
4	5 minutes in length 6 participant pairs		
5		**Warm / Cool feedback**	Supporting practitioner reflection *(Bolton, 2010)*
6			
Half term, 1 week			
7	**Intervention videos**	Expert training: Unit 0ne	Supporting the Stayer to make affective and behavioural change
8			
9	Weekly video		
10	5 minutes in length		
11	6 participant pairs	**Video stimulated recall 4**	** Measure cognitive, affective and behavioural aspect of change
12			
13			
14			
	Questionnaire 3	14 completed questionnaires	

Figure 4: Timeline for implementation

A variety of data capture methods were used to provide rich detail and as much insight as possible into the implementation case at many different levels. There were a series of intervention points including, a one day training session on II delivered by an external trainer, VSR sessions, a warm and cool feedback session and input from an II expert. I now discuss each data collection tool and offer methodological justification for this project.

3.4.1 Video recorded sessions

Due to the nature of II, I decided to collect video recordings of the interactive sequences that occurred in the sessions. This is important because they allow a detailed exploration of the implementation process. II aims to promote social communication and video data is a tool that captures the non-verbal communicative cues, including facial expression and body language (Robson, 2009). Head cameras were sourced to provide a clear image of the pupil's face to see what reactions they displayed in response to a whole range of stimuli. This would enable the staff member to recall in great detail the underlying events (McLennan et al., 2005). Also, a room camera was mounted so that two images could be viewed side by side to capture the pupil's response to a range of situations. Some staff members reported that in the initial two or three sessions they felt self-conscious wearing a head camera; others described no real change they just carried on as before. After the baseline sessions, all staff members felt that they became accustomed to wearing a camera.

When the initial images from the baseline sessions were played back it was felt that the room camera did not always show clearly what the pupil was responding to from the communication partner. There were initial practical difficulties in relation to collecting video data, as the angle of the camera did not always capture the pupil's whole face. This was solved when the head camera bracket was modified to allow for further movement of the camera angle.

It was a concern from the staff that any of the pupils may grab the camera they were wearing but in practice none of the pupils ever touched any of the head cameras. Jacob became quite fascinated by the room camera and tried to jump and grab it down on a few occasions. With the exception of one case, as discussed, the videoing was successful and produced high quality, clear sound recordings which were very useful to watch back and a clear record of the session. Following the baseline videos a decision was made to use hand held video cameras instead of the room camera to capture each staff member's actions in a more focused way.

The baseline videos were taken over a five-week period, they were edited to view the first five minutes of a session and the two session images including both the head camera angle and room camera, were replayed side by side to give a clear picture of what was happening. Following the training session there was a fourteen-week intervention phase, involving weekly five-minute videoed sessions. At this point, as discussed, the way video data was collected evolved and rather than using a room camera, a handheld video recorder was used. Through research supervision it was identified that changing the camera would capture the staff member accurately, as interactions were not occurring in a static manner and the handheld camera could record the movement and facial expressions that were important for analysis. The video recorded sessions have provided the material for VSR.

3.4.2 Video stimulated recall sessions

Video Stimulated Recall (VSR) is an introspective research procedure, which uses video data to assist the recall of an experience (McLennan et al*.,* 2005). Within this project the teachers and TAs observed the video data, and a VSR session initially involved the staff member watching the videos alongside the researcher. They then viewed the videos for a second time, straight afterwards but this time the practitioner was able to pause the video at the specific points they selected, and comment on what they felt was significant or worth discussion. In this sense VSR provided opportunities for the researcher to explore the interactions, and the adults' understanding of them in more depth (Lyle, 2003). The video sessions that were selected for VSR involved four sessions at specific points in the implementation process, specifically at the beginning and end of the baseline videos and the beginning and end of the post-training videos.

Calderhead (1981) described the process of interaction between students and teachers as being fundamental in a teaching session. VSR as a research method was selected to give insight and an opportunity for reflection from the staff member so that the video recording would provide them with a new opportunity to understand the process. Yinger (1986) felt that VSR provides additional opportunity for reflection and to elaborate on their reasons for interpretation. Gass (2001) pointed out that inappropriate questioning in the VSR process could lead to additional reflection and analysis and care must be taken to avoid this bias. As a result, I chose not to ask supplementary questions on individual video sessions although I did ask some wider questions about how what they saw on the video related to the training they were given. There are clear benefits of utilising VSR methods for this specific research project and great care was taken to minimise limitations in the process. The time lapse from video collection to VSR was within a maximum of two days; this helped to ensure the best levels of recall (Gass and Mackey, 2000). This process generated high-quality data suitable for rich qualitative analysis.

3.4.3 Questionnaires

Three different questionnaires (Appendix 5) were used to capture II knowledge and understanding at three differing points in the implementation process. The questionnaires contained a combination of open and closed questions and participants were asked to rate II skills that they believed were important (Denscombe, 2010). The baseline questionnaire was designed to ascertain any knowledge they already had about II and their individual practitioner starting points. The second questionnaire was designed to measure the knowledge and understanding acquired following the training day. The final questionnaire was designed to identify what the key implementation points were from each staff members' perspective and what their understanding, learning and change points were within the whole project. The questionnaires were completed by both the staff who participated in the project and the wider staff group who had received the II training.

3.4.4 Warm and cool feedback session

The warm and cool feedback session was an intervention point that arose from the externally-facilitated training session. This peer review process provided a framework to enable staff to consider a video clip that would highlight a positive practice and an area for improvement, in a supportive environment. The session was attended by the researcher, the deputy head teacher, the speech and language therapist in addition to the pupil's teacher and TA and each case was discussed separately. The number of staff members in the session was limited to minimise the risk of the staff feeling intimidated. As a result, the staff seemed comfortable and actively participated in the session. Two videos for each pupil were selected to show interaction at both the baseline data stage and at the point of eight weeks into the implementation.

3.4.5 Additional intervention point with one practitioner

Following the first part of the intervention phase it became clear that Rebecca, the practitioner (Chapter 4), did not implement II principles in her approach. The intervention points used had not impacted her practice and so another method/training tool of direct coaching was added to try to support the II implementation.

An expert intensive interaction practitioner (Phoebe Caldwell) was brought into the research setting to carry out a one-day intervention to get to know Jacob, observe current practice, model the II practice with Jacob and directly coach Rebecca to support her to make changes with Jacob. Phoebe utilised a range of strategies that demonstrated Jacob's engagement and following this Phoebe talked Rebecca through a session showing her how to respond to Jacob using II principles.

3.5 Insider Researcher

My dual roles of researcher and head teacher provided unique access to the complex social experience of implementing II but also raises some potential problems. I will begin by outlining the advantages being an insider researcher. I have an in-depth understanding of the school, the staff members involved and the pupils. I therefore had intimate knowledge of the community and its members, (Hellawell, 2006). I have an understanding of how individuals currently interact and of the status quo in the learning environment, knowledge that was distinctly advantageous when implementing this project and analysing the results. This knowledge would take a long time for an outsider researcher to acquire (Smyth and Holian, 2008). An outsider researcher, without the context knowledge and expertise of the pupil cohort could experience barriers in terms of accessing the pupils and interpreting the implementation of an II approach.

Despite the benefits, it is important to also acknowledge the potential for researcher bias. I made every effort to minimise this through reflection and analysis (Boucher and Smyth, 2004). As the head teacher with a role of authority in the school it is difficult to adopt a neutral and impartial position in the implementation and research process (Drake and Heath, 2011). Patton (2001) explains that this duality means the researcher must 'become part of it' whilst remaining separate (Patton, 2001, pp. 21). During the research process, I adopted a critical position, therefore my own reflection and self-awareness of the research process was central to the project nevertheless complete objectivity is unobtainable in most research but every effort must be made to ensure that bias does not seriously threaten validity and trust worthiness (Cresswell, 2013).

There are different types of observational roles that apply in research (Gold, 1958, cited in Cohen et al., 2007) ranging from being a complete observer (where a detached observer is neither seen or noticed by the participants), the observer as participant (where the researcher is known and recognised by the participants where the aim is to play as neutral a role as possible), participant as observer (where the researcher is fully engaged with the participants) or a complete participant (where the researcher is fully embedded) as a researcher but the participants are not aware of this. My role in this study was that of an observer as participant as the other participants knew my role as a researcher in which I was actively seen gathering the various data sets I collected.

3.6 Ethical considerations

As the project involves children with autism and SLD this section addresses the ethical issues in relation to the research. Utilising video recordings within the classroom setting raises ethical considerations that require careful attention (Heath et al., 2010). It is the responsibility of ethical researchers to consider the interests of research participants and ensure no harm is done to them (Lankshear and Knobel, 2004).

The University of Nottingham's Ethical Review Committee granted ethical approval prior to the commencement of the project (Appendix 1). The letter given to parents to gain their informed consent for their child to participate is included (Appendix 2). All staff working with pupils were asked for their informed consent. The consent form informed the participant of their right to withdraw their participation at any point in the project and also gave information about the aims of the project.

Another ethical concern was related to the confidentiality and anonymity of the participants (Robson, 2002). All participants' names were replaced with pseudonyms throughout the data collection and write up of the research.

The dual role I held within the school may have led to some potential implementation difficulties (Coghlan and Brannick, 2002; 2005). Although I gained consent from the whole staff team, with additional permission from some staff for their questionnaires, transcripts and video data to be utilised, I remained very aware of this power dynamic. There was a potential disadvantage in the fact that staff may have felt that they had to participate with no option to withdraw due to my role in the school, I considered the issues of informed consent with my supervisors, the school's ethical committee as well as the British Educational Research Association (BERA, 2004). I re-visited many times throughout the project the fact that staff could withdraw their consent to participate at any time and in line with the BERA guidance that staff were giving consent on a voluntary basis where they do not feel under duress.

I implemented additional safeguards with staff by removing some of the supplementary information in relation to them that meant they could not be identified from further information provided.

A key consideration throughout the research process has been the legal and ethical aspects within the project. The value of research needs to be considered in relation to benefits versus possible harm. The British Educational Research Association's Revised Ethical Guidelines for Educational Research (BERA, 2004) have been adhered to in this project. This ethical approach was critical, given the vulnerability of the pupils within the research context. Children involved in research are exceptionally susceptible to intrusion of their private space (Homan, 2001). Furthermore, this client group is diverse and may respond differently to given situations depending on their experiences and background and for that reason unique approaches to the research are important (Young and Barrett, 2001). It is interesting to note that despite a number of papers discussing ethical issues relating to research with children (Alderson, 1995; Thomas and O'Kane, 1998; Cocks, 2006) the practical guidance is virtually non-existent.

During the project, gaining informed consent was a central ethical concern. Informed assent is also relevant to discuss as it is commonly used where children are minors (Wendler, 2006). One element of assent is voluntariness (Belmont Report, 1979). Generally, children aged seven-twelve years have the cognitive capacity to assent to research based on presented information (Helseth and Slettebo, 2004) but the selected pupils were considered to be unable to provide informed assent due to their SLD and autism diagnosis. Therefore, informed consent was obtained from the selected pupils' parents or guardians. They were given an in-depth information sheet that fully explained what the research involved and their consent was gained as an advocate on their child's behalf.

Another ethical consideration for this project was the issue of privacy, this is an intrinsic value tied to human dignity and security. It covers the issues of anonymity and confidentiality and could be described as a kind of autonomy (The Data Protection Act, 1998). The data collection continually respected the issue of privacy and videoed sessions took place at suitable times. Throughout the data collection phases, teachers and TAs were always present, they had a key understanding of the pupils and their needs and this ensured that pupils were always comfortable participating in the interactions with another person.

In this sense, I perceived consent to be a dynamic process which can be withdrawn at any time and the notion of informed consent was a key ethical consideration. This is in line with Flewitt (2005) who discusses ‘provisional’ consent, which needs to be negotiated frequently, an important consideration given the complexity of the pupils’ needs in this project. The issue of consent was therefore repeatedly re-visited if the pupils had presented with a lack of voluntary participation through their behaviour. I had anticipated that if pupils had presented with an increased level of arousal, the session would end. The staff judged the pupil’s responses on a moment-to-moment basis and if it was appropriate would have ceased the interaction, this made real the pupil’s right to withdraw (O’Reilly et al., 2013). For example, during the project one of the pupils clearly communicated that she did not wish for an additional staff member to be in the classroom filming by pushing them out of the room. The previous style of data collection was continued to respect the pupil’s wishes in this case.

Teachers and educational researchers, amongst many other professions, are in a position of power (Gore, 1998). This is important to acknowledge, particularly when working with pupils with SLD and autism as due to their difficulties they are extremely vulnerable to abuse. Power can be seen to operate through relationships, not necessarily a constraint, but as a productive force. As a researcher, I perceived this power as a force that can produce a positive outcome for pupils. The participants were continually regarded as ‘active participants’ (Alderson, 2005). The consent that was sought in relation to the alternative usage of educational data and the benefit versus harm balance were vital ethical considerations in this project.

During the research process, I became aware of details and knowledge that I would not have ordinarily seen in my head teacher role. As the project progressed I became aware of the sensitivity of some of the issues that have arisen through this research and the impact when carrying this out in my own institutional context with staff members. Through keeping a reflective journal and discussions with my supervisors these risks were acknowledged and mitigated where possible. I had notified staff in writing that the process would be confidential and at any time they may withdraw their consent. I am aware that being the head teacher some staff may have felt a pressure to participate. In order to try to balance this whenever I wanted to use an additional transcript or questionnaire I sought additional written permission via email to ensure that participants were regularly offered their right to be able to withdraw consent and that they were clear what elements of the research project may be utilised. This dual role tension of navigating the ‘hidden ethical and methodological dilemmas of insiderness’ was described by (Labaree, 2002)

3.7 Data analysis

As discussed, it was not possible to gain the pupils' direct perspectives and their experience of implementation of the II process. I initially observed the videos twice and noted some of my immediate thoughts and impressions. I then worked through the entire video data set systematically generating initial codes, the initial codes were then collected into themes and these were reviewed and refined throughout the data analysis period. The data analysis was carried out in accordance with the six stages suggested by Braun and Clarke (2006): 1) familiarisation with the data; 2) coding; 3) searching for themes; 4) reviewing themes; 5) defining and naming themes; and 6) writing up. Thematic analysis was applied to the whole data set as demonstrated in Figure 5.

Phase	Description of the process	How applied to these data sets
Familiarising yourself with your data	Transcribing data, reading and re-reading data, noting down initial ideas	Video recordings were watched twice through some initial notes were taken VSR data sets transcribed and re-read Questionnaire data gathered and read through twice
Generating initial codes	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code	The entire data set was worked through systematically and codes were identified. This process was undertaken manually by the researcher and the amount of data being thematically analysed was

		manageable with this method See Appendix 3 for initial coding examples from VSR transcripts Potential patterns were highlighted and post-it notes were used to identify parts of the data which appeared important The extracts of the data that were considered significant were coded
Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme	Themes were identified by the researcher A visual representation of the data was created as a thematic map with post-it notes
Reviewing themes	Checking if the themes work in relation to the coded extracts and the entire data set, generating a thematic map of the analysis	Checking that the themes identified were appropriate in relation to the coded data extracts and in relation to the entire data set Some themes were re-visited at this stage and slightly re-worded to capture an accurate reflection of the data
Defining and naming themes	On-going analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme	A clear theme was generated and checked to ensure the essence of the theme was reflected to avoid presenting any misleading information Themes were also checked by another Doctoral researcher to ensure inter-rater reliability
Producing the report	The final opportunity for analysis. Selection of vivid, compelling extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis	Produced the written report

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Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme	Themes were identified by the researcher A visual representation of the data was created as a thematic map with post-it notes
Reviewing themes	Checking if the themes work in relation to the coded extracts and the entire data set, generating a thematic map of the analysis	Checking that the themes identified were appropriate in relation to the coded data extracts and in relation to the entire data set Some themes were re-visited at this stage and slightly re-worded to capture an accurate reflection of the data
Defining and	On-going analysis to refine the	A clear theme was generated

naming themes	specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme	and checked to ensure the essence of the theme was reflected to avoid presenting any misleading information Themes were also checked by another Doctoral researcher to ensure inter-rater reliability
Producing the report	The final opportunity for analysis. Selection of vivid, compelling extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis	Produced the written report

Figure 5: Phases in thematic analysis (Braun and Clarke, 2006)

I then applied the data analysis framework to the VSR transcripts and began by transcribing the audio material and reading the data set through to create initial codes (Appendix 3), the development of this could be seen in the VSR thematic map (Appendix 4). A similar process of thematic analysis and content analysis was undertaken throughout the questionnaire data set (Appendix 6 and 7). Content analysis is where the text is analysed to identify key words, phrases, sentences and these are firstly coded and then organised into themes. Content analysis has been described as "a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use" (Krippendorff, 2004, pp.18). Common to both thematic analysis and content analysis are that the concepts and themes emerge from the data however, one key distinction between the two is that in content analysis, the codes and themes are tallied, allowing the researcher to identify the "relative frequency and importance of certain topics" (Anderson and Arsenault, 1998, pp. 101-2), this measuring of the frequency in different themes allows the numerical data to be used. This was then applied to the questionnaire data. Data analysis required a reflective approach; I refined and developed the key themes through the various stages. The thematic approach has been subject to criticism due to its subjectivity, however I felt this flexibility was particularly appropriate for the exploratory research questions.

The data sources were the video sessions of baseline and post-training data, transcripts of the VSR sessions including the comments made and answers to questions asked, transcriptions of the warm/cool feedback sessions and the three questionnaires available from various points in the process. All of these data sources provided an in-depth view of the case. Thematic analysis included all data sets to give a multi-dimensional view of the particular themes and this provided a useful platform to analyse the data. This in-depth analysis was useful to contrast the varying perspectives and also to give rich data which was capable of showing discrepancies such as an individual staff member may have understood a concept at a theoretical level but perhaps not at a practical level and the rich data sources were able to highlight such discrepancies.

3.8 Summary

In this chapter I have discussed the case study approach and the way in which it would be utilised in this study. The data collection tools were then outlined and these will contribute to the data sets to address the research questions. The implications of being an insider researcher were addressed and ethical considerations for all involved within this study were examined.

The process of data analysis has been described by utilising thematic analysis (Braun and Clarke, 2009) a structured approach to analysing the data has been carried out, this has been described and examples of this can be found in the appendices. The data analysis undertaken underpins the next chapter where the results of each embedded unit within the overall case will be discussed.

Chapter 4: Analysing the case

In this chapter I will outline the four units, three consist of dyad pairs of either a teacher or TA with a pupil and the final unit summarises the results of the questionnaire data set. Each unit of dyad pairs has a case narrative used to illustrate three key themes, which are the same in all three units, at set points in the implementation process. These key themes are body language, activity and communication and provide a sense of progression, if any, and a way of contrasting and comparing the cases. The VSR was at three set points during the project; during the baseline videos (VSR 1/2), immediately after training (VSR 3) and at the end of the whole implementation process (VSR 4). Following this section of the case narrative I highlight specific key themes within each unit.

4.1 Unit One – Rebecca and Jacob

Here I present a dyad made up of the TA Rebecca and the pupil Jacob for whom the key themes were; a) limited interaction, b) consistently staff-led interaction, c) fragmented interaction and d) staff perception of implementing II.

4.1.1 Unit one background

Rebecca had limited experience of working in an educational setting; her training for this post involved a one-week induction. Rebecca presented as a confident staff member who has shown resilience when supporting highly challenging individuals. She had supported Jacob consistently and despite having experienced his challenges she continued to work confidently with him.

Jacob was a fifteen-year old boy with a diagnosis of autism, SLD, CB and Pica. Jacob's risk assessment had resulted in him having two staff members to support him at all times, he rarely sat still and often paced around the room making deep, loud vocalisations. He frequently used blankets and clothing to wrap his hands and arms whilst wearing hats or weighted items on his head. Jacob was particularly challenging towards himself and others and he would often bite himself and furniture. In addition, he would unpredictably slap, head butt and kick staff members even during a seemingly calm state. Jacob can therefore appear quite intimidating which is emphasised by his tall stature. This had the effect of many staff members lacking confidence when working with him. Jacob could also be destructive and would throw objects including large items of furniture such as tables and cupboards. This results in him requiring a large, minimalist classroom space, which is individually tailored to his needs by using robust and fixed furniture. His ability to interact with others remains limited and he often engages in what appears to be self-stimulatory behaviours such as hand flapping. It was therefore important to address his social communication needs and to provide the staff with interactive skills to support Jacob more effectively. The II approach was deemed suitable for Jacob, particularly due to his developmental level, and it being a non-competence model of practice where the fundamentals of communication are the focus of interaction.

4.1.2 Unit narrative

The tables within this section include the key themes that link with the implementation of II. I compare my own description of what I observed in the video clips with the direct response from Rebecca's VSR and I analyse and discuss these sequences.

4.1.2 a) Baseline data: prior to II implementation

Researcher description from video observations:	**Rebecca's Video stimulated recall:**
Body Language Rebecca is observed to put her hand under Jacob's chin and on top of his head to lift his face, whilst saying "Jacob looking".	"He keeps trying to go away because he doesn't want to do it, but he is bringing his eyes back up so that I can see his face and he can see my eye contact so we

	can just keep carrying on with what we are doing" (VSR 2).

The attention that Rebecca devotes to gaining eye contact is particularly pertinent for this baseline data and impacts her actions. In order to secure eye-contact she frequently moves Jacob's head position and is seen to lean in towards him to ensure his response, rather than allowing Jacob to initiate or sustain this for himself. Rebecca's comments (VSR 2) indicate that her view of interaction is based on her agenda rather than the pupil's which is in contrast to II's aim of promoting pupil led interaction.

Researcher description from video observations:	**Rebecca's Video stimulated recall:**
Activity During the session Rebecca sings eight rhymes and songs. During one of the latter songs Jacob's vocalisations increase in volume and he begins pacing up and down the room. Rebecca is seen to follow him, saying 'calm down' and continues singing. Following Jacob's intense pacing, his vocalisations increased and Rebecca left the room due to his behaviour escalating.	"If I just left Jacob he would start pacing the room and start tipping things, but because I am interacting with him he is just on that border where I can bring him back down so that he doesn't go. His vocals are telling me that he wants me to leave him alone" (VSR 2).

When viewing the baseline video clips there are limited examples of activity within the sessions. Rebecca uses singing as the main activity. Rebecca's comments show that she was able to read Jacob's signals that he was disinclined to interact with her. Rebecca therefore seems to disregard the cues she picks up on and discusses her determined approach to encourage interaction. This is surprising given the highly challenging behaviours that Jacob could exhibit, potentially towards her. It could signify Rebecca's determination to do a good job, regardless of personal consequences. However, it could also be that she felt under pressure to carry on the session because she was being recorded.

Researcher description from video observations:	**Rebecca's Video stimulated recall:**
Communication During the session Rebecca communicates to Jacob through singing. He responds by withdrawing under his blanket and covering his face. He then pushes Rebecca's hand away from him.	"Jacob isn't keen to interact at this point; I am really trying to encourage him to try and come out of himself...when I see Jacob getting hyper I just break from whatever I am doing and automatically start singing to him" (VSR 2).

This is considered to be a mismatch between Rebecca's communicative style and her understanding of Jacob's cues.

Rebecca's comments show that she understands Jacob's cues to withdraw from interaction but the video sequence shows Rebecca not to do this and she continues to interact in this way. Rebecca discusses her rationale in the VSR for using singing as a calming strategy with Jacob. This contrasted with the video clip that showed Jacob to withdraw from singing during the session.

4.1.2 b) Implementation phase: following II one day training

Researcher description from video observations:	**Rebecca's Video stimulated recall:**
Body Language Rebecca lifts up Jacob's leg whilst he lies on the floor, whilst singing she then gently encourages his knee to make contact with his nose.	"…He obviously enjoyed the knee pressing against his nose and then obviously I knew I had got his attention now" (VSR 3).

Following the II training, the video data highlighted the theme of body language through the use of touch. Jacob shows limited response to this technique that Rebecca continues to draw upon. Rebecca comments during the VSR that she perceives Jacob to be enjoying the activity, however, there was no observable indication of this in the video sequence. It could be that Rebecca sees nonresponse as a positive cue to indicate that Jacob enjoyed the activity, as he would display CB to end less favoured activities. Rebecca discusses the use of touch in order to gain Jacob's attention; this indicates the importance she places on attention when interacting.

Researcher description from video observations:	**Rebecca's Video stimulated recall:**
Activity Rebecca is observed in this session interacting with Jacob by initiating six different singing rhymes within the sequence.	"Generally, when I do interaction with Jacob, Jacob usually initiates the interaction…" (VSR 3).

The use of song continued to be led by Rebecca, indicative of limited change in Rebecca's interactive style after II training. During the VSR, Rebecca comments that Jacob typically initiates interaction with her but this contrasted with the video observations of Rebecca leading each session, as she introduced various songs throughout. This difference between the video data and Rebecca's perspective of the session demonstrates her limited self-awareness and an inability to identify her directive style of interaction.

Researcher description from video observations:	**Rebecca's Video stimulated recall:**

Communication Jacob is seen in this session to lower his head and avoid eye contact with Rebecca. She then responds to Jacob by lifting his head and she sings to him at this point saying; 'what does Jacob want?'	"He doesn't want to interact; he just wants to put his head down so you can see I am just lifting his head up to get the attention" (VSR 3).

In this session Jacob is seen to adopt a socially withdrawn body position. Despite Rebecca reading his body language cues to withdraw from interaction, she does not respond in this way. Rebecca's is observed to use touch to gain Jacob's attention, she appears to prioritise gaining Jacob's attention through eye contact, rather than following Jacob's lead.

4.1.2 c) Completion of implementation strategy

Researcher description from video observations:	**Rebecca's Video stimulated recall:**
Body Language Jacob's attention was on the string of his trousers and Rebecca was observed to take the string from him. Rebecca was in very close proximity and was utilising vocalisations to gain his attention.	"Jacob is distracted by the string that is on his trousers, so what I am trying to do here is to take his attention away from that…This is Jacob telling me that he doesn't want to interact with me. He has turned his head

	and is more interested in playing with the string on his trousers at the minute…. I'm using vocals here to try to catch his attention because in the past they have said not to speak, so I am trying to use vocals rather than speech" (VSR 3).

In this session Jacob is occupied with his own activity, but rather than joining in with this, Rebecca removes the string as she feels this was a distraction away from her. However, Rebecca could have used the string as an activity to facilitate interaction. Rebecca identifies that Jacob is reluctant to engage in interaction as seen in his body language but she is not seen to pause for Jacob's response but continues to verbally seek interaction.

Researcher description from video observations:	**Rebecca's Video stimulated recall:**
Activity At the start of the session Rebecca is seen to be quiet and appears uncomfortable when looking at Jacob. Rebecca responds to a limited number of Jacob's vocalisations by copying them. Rebecca begins to hum a song for a short time and by the	"Here what I was advised to do was not to use as much speech, just by keeping it quiet and just using sign or quiet vocals and not too much speech" (VSR 3).

end of the session sings a song to Jacob.	

In this session of interaction between Jacob and Rebecca there were some observable changes in relation to her use of song as an activity. This briefly affected Rebecca's practice where she began the session quietly, however by the end of the session this change was not sustained. Rebecca was seen to find it difficult to reduce her verbal language, as this was not observed to be part of her typical interactive style. Rebecca identifies her reduction in the use of song as a direct response to the additional intervention opportunity within this case.

Researcher description from video observations:	**Rebecca's Video stimulated recall:**
Communication In this session Jacob showed no response to Rebecca clicking her fingers. Rebecca continues to do this on several occasions, as she moves closer to his face. Jacob then responds by positioning his body away from Rebecca with his head tucked in towards his knees. At this point Rebecca sits next to Jacob leaning closely towards him.	"I have moved my chair round to the other side and I am clicking my fingers to try and get him to turn his head towards me, because I was sitting at the front of him, so I thought if I move a little bit he might have to bring his head back around and I might get his attention again" (VSR 4).

Rebecca did not respond to Jacob’s cues to disengage from interaction; her style of interaction was directive which does not suit the II approach. Observations from the final two videos revealed an increase in verbal language and the use of song interaction became more similar to the earlier videos. Rebecca was seen to return to singing rhymes with Jacob and continued to lead the interaction, despite the implementation strategy in this case.

4.1.3 Key themes of Unit one

Thematic analysis of the data sets available for this unit result in key themes of; limited interaction, a consistently staff-led and fragmented approach, and self-perception of implementing II.

4.1.3 a) Limited interaction

The theme of limited interaction relates to the lack of connection and interactive sequences observed between Rebecca and Jacob. Throughout the video data there was a limited amount of shared experiences and turn-taking moments that are considered as an interaction. This theme was continually commented upon in my reflective journal whilst observing the video data:

> "I am surprised that throughout the baseline and post training video there are few moments of reciprocal interaction between Rebecca and Jacob, there are minimal moments that give the sense of a shared experience. Jacob rarely looks at Rebecca and makes definite attempts to avoid this eye contact, even when he covers his head using a blanket; Rebecca soon after Jacob's avoidant response lifts his blanket to pursue eye contact. Jacob is frequently showing Rebecca he does not want to engage with her, actively turning away and lowering his head. It is interesting to observe the changes in Jacob's body language. In most sessions, he begins the interaction seated in a relaxed manner and as the demand for interaction develops from Rebecca he clearly changes his relaxed position to a much more closed body position" (Journal Entry).

A key indicator of limited interaction is the minimal amount of eye contact from Jacob. Rebecca focuses her efforts on gaining his eye contact and does not respond to Jacob's cues when he is communicating and gesturing a reluctance to look at her.

Further evidence of the lack of interaction comes from the body position Jacob adopts; he continually limits social availability by turning away. Rebecca is 'out of sync' when responding to Jacob's body language and despite her ability to read his cues as shown in the VSR, she is not observed to respond to these.

4.1.3 b) Consistently staff-led interaction

Rebecca consistently directed the session and Jacob was not seen to initiate the interactive sequences within the videos. This practitioner-led approach to implementation does not support an understanding of the strategies for II. Rebecca commented that:

> "When I am doing things like this with Jacob, I am thinking of how to keep Jacob from going 'up' and how to get his attention. My first thing is to try and have some fun with Jacob: that's the first thing in my head" (VSR 2).

This is contrasted with the information Rebecca provides in the final questionnaire when she was asked about the important points to consider when delivering II, she writes: *"Being able to know when to follow the child's lead and let them lead the session…" (Questionnaire 3)*. Rebecca alludes to her practice of leading the session as she comments about her own agenda of interaction about what she plans 'on doing' with Jacob. Rebecca mentions 'keeping Jacob from going up', and in this sense, is focused on Jacob's arousal levels. Rebecca discusses her thought processes and this demonstrates a pre-conceived plan of what the session will involve. If the session was pupil-led, then the pace and overall sense of the sequence would reflect the interaction set by the pupil whether it be calm, excitable or a fluctuation of these.

Rebecca also makes demands during the interactions with Jacob, for example throughout the videos she makes requests, saying; "Jacob looking, looking, looking…" Rebecca often focuses on gaining an outcome from Jacob, which does not support the II approach that is concerned with the quality of interaction. This reinforces the agenda and particular sequences of interaction that she aims to initiate. Overall, I perceive the engagement in activity to be demanding, support for this also links with Rebecca's comment that *"When I am at home things pop into my head and I think 'I will try this with Jacob'" (VSR 2).*

Rebecca also relies on touch as an interactive tool to lead the interactions with Jacob. It is important to recognise that Jacob's response to touch is often neutral and yet there are many examples of Rebecca continuing to use this technique during interaction. Overall this supports the concept that Rebecca did not follow the pupil's lead despite her written responses within the final questionnaire.

4.1.3 c) Fragmented approach

The lack of flow in the communication leads to the fragmented nature of the interactions between Jacob and Rebecca, occurring possibly due to Rebecca's limited understanding of how to respond to Jacob utilising II principles. Throughout this case the fragmented approach appeared to occur within a fast-paced session, which in turn had the effect of hindering interactive opportunities for Jacob. There are a limited number of occasions that Rebecca pauses and waits for a response from Jacob, instead Rebecca continuously initiates and sustains her own activity agenda.

> "Because I think quite a lot about Jacob and obviously trying to keep his attention is difficult because he only has a short attention and I just try to think of different things, what kind of objects and what kind of things I can do to make it better for him" (VSR 3).

The use of activity is considered an important aspect of this case and Rebecca often drew on activities that were not initiated by Jacob. The focus of the interaction was through Rebecca using herself as the activity, for example by singing or manipulating his body to interact instead of using object-based activities. The way Rebecca utilised activities impacted the flow within the interactive session, and through several fast-paced songs, this inhibited reciprocal communicative opportunities.

4.1.3 d) Self-perception of implementing II

Rebecca’s perception was that her practice developed during the research process, but it is significant that Rebecca had previously stated in the VSR that “…actually, doing the interaction I felt that I was already doing that [II]” (VSR 3). In this, Rebecca asserts that her practice had not changed due to her belief that she was implementing an II approach at the beginning and throughout the research process. Rebecca appears to misperceive her skillset and arguably is over-confident in her implementation of II. Rebecca states that her ability to integrate II is due to her in-depth knowledge of Jacob and his needs. As she commented in the VSR that:

> “One of the biggest influences I think is the relationship I have with Jacob. This has really helped shape me doing my Intensive Interaction...The relationship I have with Jacob has been an influence, so I feed off him and what he gives me” (VSR 4).

Rebecca perceives that she has a good relationship with Jacob and that this bond allows her to implement II. She also attributes her experience as a parent as an additional factor that influences her ability to implement II, she often discusses her interactive style as similar to her experience bringing up her own child, she stated that “It is all trial and error really; I think of things I did with my own child” (VSR 2).

Rebecca suggested that the activities she engaged in with her own child are sometimes replicated during interactions with Jacob. Her experience as a parent could have been a barrier in her receptiveness to II training and/or her ability to implement II as she may have struggled due to her perception of Jacob as a pupil with different needs due to his autism. Rebecca commented that this process was about trialling a new approach and judging Jacob's response, the VSR tool aimed to assist reflection, however the data demonstrated a lack of awareness of what 'follow the child's lead' means. She also mentions that her ability to implement II may have been influenced due to the effect of being videoed.

> "The camera is more about having to get Jacob to interact at the exact moment. The camera doesn't particularly phase me but I feel I have to get some kind of interaction going at this time, whereas I would usually wait for Jacob" (VSR 3).

This suggests a sense of pressure Rebecca felt when interacting with Jacob during the sessions, and may have affected the practitioner-led approach she adopted. Rebecca does not comment on the impact of videoing on any other occasion during the project.

Rebecca’s perception of her implementing II was described on two separate occasions during the implementation process. After the training Rebecca commented that she was already implementing II and did not need to change her practice. Towards the end of the implementation process Rebecca felt that the training had impacted her practice when she writes “I have learned to let the child guide the session while I follow their lead” (Questionnaire 3).

Rebecca’s descriptions of how she changed, not needing to change and how she let the pupil lead the interaction were not observable in practice on the videos.

4.1.4 Training on II and general competence

Rebecca began the project with a limited understanding of II, her response to the question ‘What does the term II mean to you?’ prior to any training she stated it:

> “….. is being able to get the child’s full attention on what you are trying to do with them, getting eye contact, getting good reactions from them…” (Questionnaire 1).

This statement is interesting in that many of the interactions between Rebecca and Jacob have these identified patterns of engagement at the heart of them. Rebecca has prioritised eye contact, full attention and trying to ensure engagement throughout. Although the response from Rebecca in questionnaire 3 demonstrates a more theoretical and developed understanding of the II approach this is not evidenced in the videos.

In the VSR there was a mismatch between Rebecca's accounts and what was observable to the researcher. Rebecca often describes Jacob as 'wanting' or 'obviously enjoying' activities that she initiates, however there was no visual clues within the video clips that reinforce this belief. On some occasions Jacob is able to express preferences within activities through the use of facial expression like smiling, with gestural cues and open body posture.

The video data offered unique insights into the long interactive sequences between Rebecca and Jacob. In line with my role as head teacher, this was not typically available to me, as within my role I would frequently visit classrooms to briefly observe pupils and liaise with the staff team. Within my observations prior to the project, Jacob's staff members would tend to pause their interaction, rather than continue their typical routine. This may relate specifically to Jacob, due to his unpredictable and potentially challenging behaviour. Therefore, as a result of my own experiences when viewing the baseline data initially I felt a sense of shock and surprise in relation to this case. This was captured within my reflective journal: “Shocked at talking level, over stimulation, lack of cues taken from child” (Journal Entry).

Rebecca’s approach is particularly unexpected, when considering Jacob’s communicative needs and his diagnosis of autism with SLD. I would have expected the staff to recognise the impact using language and potential over-stimulation could have on his ability to process information. I had anticipated a calmer and slower paced session, as this would have been stressed as part of each staff member’s induction training and Jacob’s teacher would also have modelled appropriate interaction.

A possible explanation for Rebecca’s interactive style could be due to her parenting experiences, which she herself makes reference to as a factor influencing her ability to implement II. I felt that from watching the videos that the interactions between Jacob and Rebecca were similar to parent-child interaction of a typically developing three to four-year old, which importantly does not match the II approach that relates to parent-infant interaction at the earliest developmental levels to promote the fundamentals of communication. Jacob has yet to acquire these skills; therefore, the interactive level Rebecca was utilising was a mismatch to Jacob’s current developmental level.

4.1.5 Summary of Rebecca and Jacob

The implementation of II did not seem to have had any significant impact upon Rebecca's practice, despite training and advice on how to employ II with Jacob specifically. After the training, there were knowledge level changes and Rebecca's responses demonstrated in the latter questionnaires some enhanced understanding of the important features of II but these were not evident in her day-to-day practice. In this way, some level of learning and development was apparent, but a key barrier to this may have been Rebecca's limited insight when watching her current practice; she may not have intrinsically seen a need to change. Rebecca's apparent confidence could therefore have stemmed from her aim to seem a capable practitioner with a natural ability to implement the strategies involved in II interactions. Another explanation could be an anxiety in Rebecca that results in her rigid adherence to a familiar pattern that she sees as having served her and her child well in the past.

The warm/cool feedback session gave direct positive praise to Rebecca on calmer moments in a session, when Jacob initiated his own activity and a moment of mutual enjoyment. Following this session there were no increases observable in these behaviours. Opportunities were identified to try to engage Jacob but there was no evidence of the trialling of these strategies in any subsequent videos.

Uniquely to this unit, a supplementary training session was implemented. An expert II practitioner was able to give Rebecca direct advice, modelling and feedback that was specifically related to implementing II with Jacob. During this session, Rebecca was shown how to use strategies and given direct feedback and running commentary to demonstrate to Rebecca how she could engage with Jacob using only vocalisations. After this additional training, within the next session there was a return to Rebecca's former interactive style, change was therefore not sustained in this case.

4.1.6 Conclusion

There were many opportunities for Rebecca to change and develop as a practitioner within this research process. In the VSR Rebecca did not offer any critical observations but more descriptive accounts as she saw them. The formal II training provided Rebecca with theoretical and practical examples of the II approach. Following which there was limited evidence of change in the videos, but there was evidence of some increased knowledge in the questionnaire data. Further VSR sessions did not capture any change regarding Rebecca's practical ability to implement II.

This unit demonstrates very limited changes that were observed in practice but these were not sustained and a summary of the VSR sessions used with this dyad pair are seen below in Figure 6.

Video stimulated recall (VSR)	**Body language**	**Activity**	**Communication**
VSR 1	Physical prompt	Singing	Singing
VSR 2	Avoids Eye Contact	Leaves the room	Hides in blanket
VSR 3	Physical prompt	Singing	Singing
	Passive	Passive	Turning away
VSR 4	Close proximity (Touch)	Hums Singing	Clicking fingers Singing
	Hides in blanket	Passive	Turning away
Key to coding			
Practitioner	Significant Change	Some Change	No Change
Pupil	Significant Change	Some Change	No Change

Figure 6: Responses to Implementation – Rebecca and Jacob.

From this table, it can be shown that there were some changes trialled by the practitioner (VSR 4) indicated as some change, these changes from the practitioner saw no change in the pupil's response. This lack of pupil response could have been a contributory factor to the change not being maintained in this unit. The table does highlight that despite their being some limited change the vast majority of practitioner responses throughout this project showed no change in practice to all of the implementation points offered.

4.2 Unit Two – Laura and Kerry

Here I present the dyad pair Laura, a TA working with the pupil Kerry. The unit specific key themes were; a) changes in verbal language, b) changes in II techniques, c) changes in the use of activity, and d) reductions in CB.

4.2.1 Unit background

Laura had no experience of working in education, autism or II, before her employment eight months prior to the start of the research. Laura had no formal childcare qualifications or specific training in this area. She enjoys teamwork with colleagues and is positive about the pupils she supports. Laura presents as a confident, passionate and assertive member of staff who has shown adaptability and resilience when managing complex and challenging pupils. Although Laura had been in post a relatively short period of time, she has shown enthusiasm and keenness to learn new skills, including attending additional training sessions in her own time that was arranged for teaching staff.

At the start of this project Laura had been supporting a new pupil, Kerry, for six weeks using non-II principles. As Kerry had a diagnosis of autism, SLD and CB, she was considered to have complex social communication needs. Kerry's significant learning challenge was her lack of connection with people; she presented as isolated from the outside world and appeared to have little motivation to engage with others. At the beginning of the project Kerry would communicate her needs through intense self-injurious behaviour and this would be displayed with up to fifty incidents of CB a day requiring physical intervention to prevent injury to Kerry. This required staffing on a two to one basis to manage her specific risks and ensure her safety.

Given Kerry's presenting needs and challenges II was deemed to be the most suitable approach at this time. It was evident that the approaches used in her previous placement were not about promoting interaction but focused on managing her safely. Kerry was twelve years old at the beginning of this project and appeared to have an engrained behavioural pattern. There was now a unique opportunity to try a different approach in a relatively novel setting with new strategies to promote her engagement.

4.2.2 Unit narrative

4.2.2 a) Baseline Data: Prior to II implementation

Researcher description from video observations:	**Laura's Video stimulated recall:**
Body Language Kerry was engaged in her own activity of jumping up and down. Laura is observed to offer Kerry the straw by modelling blowing into the straw. Kerry continues jumping so Laura takes her hand gently and gestures her towards the chair. Kerry then blows the straw in the paint bubble tray.	"I took the straw over to Kerry, held her hand and brought her to the activity, but then made her sit down at the tray so she was totally focused on it" (VSR 2).

There was a clear emphasis from Laura upon Kerry attending to the activities that are set up prior to the session. Although Kerry can be observed to be engaged in her own activity, Laura is intent on engaging Kerry with the activities on offer. This session showed Laura to use directive body language as she focuses her interaction on Kerry sitting down to participate in an activity, using her own body position to reinforce this.

Researcher description from	**Laura's Video stimulated**

video observations:	recall:
Activity Kerry is observed to be sitting opposite Laura and she is sprinkling lentils slowly, watching them flow between her fingers. Kerry is focused on this activity and Laura kept calling her name to try to attract her attention.	"She was in the sandpit with the lentils… it was a bit hard to get her attention because she was doing her own thing. So really what I should have done was try to get the whistle" (VSR 1).

When Kerry is engaged in an activity on her own, rather than Laura joining in this activity with her she is focused on gaining her attention, this is a missed opportunity for interaction. Laura's reflection was to try a whistle activity, again demonstrating that her focus is to encourage Kerry's attention on the activity she has identified. This sequence highlights the emphasis Laura places on securing Kerry's attention and participation with pre-determined activities. Laura's VSR in this sequence suggests that she feels a sense of failure when she has not managed to sustain Kerry's attention on the activity for a long enough time period.

Researcher description from video observations:	Laura's Video stimulated recall:
Communication Kerry was balancing on a balance board and Laura sat in the corner of the room blowing	"…I was asking her 'more' for her to say 'more' back to me "…I was asking her to ask me for

bubbles from the foot spa. Laura brought a handful of bubbles over to Kerry and blew them towards her, repeating the phrase “more.”	them.” “… I was asking her ‘more, more’ for her to do it” (VSR 2).

The interactions and typical patterns of communication observed in the baseline videos were primarily verbal language to ‘instruct’ Kerry. In II terms this represents over-reliance on verbal language in trying to encourage Kerry to request “more”, as this is the only attempt at spoken word used by Kerry. It was particularly pertinent that Laura continually requested ‘more’ from Kerry and this seems to represent the value that she places on verbal language rather than the non-verbal skills required for social communication. Noticeably the pace was fast and there seemed a high expectation of Kerry to either engage or ‘speak’ in order to demonstrate her attention to the session.

4.2.2 b) Implementation phase: Following II one day training

Researcher description from video observations:	**Laura’s Video stimulated recall:**
Body Language Kerry is sat on the floor by the foot spa. She is focused on Laura blowing bubbles, Kerry then	“I was trying to copy the same actions that Kerry was doing” (VSR 3).

initiates tapping the bubbles on Laura’s hand. Laura then mirrors this and taps the bubbles on her hand too.	

Following the II training this video sequence demonstrates that there has been an acknowledgement and shift from Laura in relation to copying and joining in with behaviour and actions. Laura is seen in this sequence to engage in copying Kerry’s actions, which she did not do in the baseline videos.

Researcher description from video observations:	**Laura’s Video stimulated recall:**
Activity Kerry is stood over a water tray, filled with sensory toys. Kerry was using a straw to blow the objects along the top of the water. Laura was seen to observe Kerry doing this and said; ‘good girl’ throughout.	“When she was putting her head in the water, I was letting her do it as she wanted, but trying to encourage her to carry on blowing with it and just giving her lots of praise” (VSR 3).

Laura remains focused on Kerry’s participation in activity rather than utilising the activity to promote interactive sequences with her. Laura does not encourage joint attention through a shared activity, instead she focuses on Kerry’s engagement and interest in the water play session. Laura’s use of praise in this activity is not seen to enhance their interaction and she uses verbal communication within the activity rather than focusing on non-verbal communication sequences.

Researcher description from video observations:	**Laura’s Video stimulated recall:**
Communication Laura uses Kerry’s name on occasion and holds out her hand to encourage Kerry to interact with a foot spa and pasta tray.	“I try to instruct her and lead her and show her what to do with the different activities available, because she might just walk in and not realise” (VSR 3).

The use of communication is focused on gaining Kerry’s participation in specific activities, but the amount of verbal language has reduced in this sequence from the baseline videos. Laura utilises other cues such as offering her hand to support Kerry’s interaction with the activities. The reduction of verbal communication led to a slower paced, calmer session that provided increased interactive opportunities.

4.1.3 c) Completion of implementation strategy

Researcher description from video observations:	**Laura’s Video stimulated recall:**
Body Language Laura begins the session by sitting with Kerry, whilst Kerry sat on the floor rocking her	“I try and move myself closer to Kerry there, and sit down on the floor next to her” (VSR 4).

whole body backwards and forwards whilst vocalising.	

This session shows a change in body language use as Laura has positioned herself on the floor next to Kerry. Kerry is engaging in her own behaviours and this appears to have been accepted by Laura, whereas in contrast with earlier video sequences she would have been trying to persuade Kerry to participate in the activities which she had set up. Laura does not join in or participate with Kerry with the actions she watches her quietly observing her behaviour.

Researcher description from video observations:	**Laura's Video stimulated recall:**
Activity Whilst Kerry was engaging with a foot spa. Laura was holding up some of the bubbles and bringing them up close to Kerry's face.	"I found that Kerry liked this, so I carried on with it. I would rather use that, than give her twenty things that she didn't enjoy" (VSR 4).

In this session of engaging with the foot spa Laura was commenting on the fact that Kerry showed enjoyment with this activity, this was felt to be a qualitative difference as previous data shows the number of tasks and completing them all to be the priority. The overall session was impacted by this more relaxed attitude to activities shown by Laura, the pace was much slower and Kerry was given her own time to explore activities.

Researcher description from video observations:	**Laura's Video stimulated recall:**
Communication Within the session there are exchanges between Laura and Kerry that are non-verbal including eye contact, gestures as well as times of silence. During the session Laura calls Kerry's name to gain her attention on some occasions.	"I can see here I haven't talked as much to Kerry. I've learnt that from the training" (VSR 4).

The reduction in language was the most observable change during this session when contrasted with the baseline data. There was a clear reduction throughout this project in the use of language, Laura seemed to take her lead from Kerry and noticed that the verbal language restricted Kerry's engagement within the activities. This is in keeping with the implementation of II. Typical interaction and communication often relies on the use of verbal language, but for Kerry this can have limited meaning or could be inaccessible. The changes of non-verbal communication such as the use of body positioning and facial expression is much more supportive of interaction as seen in this sequence.

4.2.3 Key themes of Unit two

Using thematic analysis of the data sets available for this unit there are specific areas that will now be discussed further.

4.2.3 a) Changes in verbal language

The most apparent theme that emerged in this unit is the changes in verbal language used by Laura when implementing II. From the very first video observation it was striking that there was intense use of verbal language during the sessions. I would have expected much less verbal language due to the developmental level of Kerry. As a researcher looking at the baseline interactions the amount of verbal language Laura uses meant that implementing II could be a challenge as the observed style of language use was very different to the minimal language used within II.

It was also apparent that there was a lot of language that could be perceived to be demanding, in particular the number of requests placed upon Kerry. There was continual verbal dialogue, which involved instructing Kerry to engage in activities.

This extract is taken from the second baseline video, "What's these Kerry (ARRH), Kerry looking, looking, sit down, Kerry, Kerry looking, Kerry, what's these (ARRH) look Kerry do it" (VSR 2). This sequence illustrates the number of verbal demands from Laura whilst trying to promote Kerry's engagement with some whistles. From the short extract above there are as many as eight requests within one sentence. Kerry was seen to disengage with the activities as at several points she turns away from Laura. When Laura took part in the VSR session watching the video sequences she commented on her use of verbal language that "…On my first videos that I did I was very vocal" (VSR 2).

Laura is keen to acknowledge at various points that she was reliant on verbal language and she wanted to reduce this. Laura's own observation supported the change she made in her practice as a result of watching the first VSR clip. It was evident that some of the verbal language Laura used in the baseline videos focused upon praise, this style is seen to restrict interactive opportunities as it limited other non-verbal communication. During the baseline videos, there were several occasions that Laura said: "Good girl Kerry, good girl" (VSR 2).

This phrase was used in an animated tone and was not in response to Kerry's actions. The use of praise did not match Kerry's actions and appeared to be a pre-determined script in terms of what was said. During the VSR session Laura comments on her generous use of praise.

She seems to perceive the use of praise as a positive aspect of her interaction, and did not recognise this to interfere with promoting social opportunities with Kerry. Laura was observed to use praise artificially and out of context as repeatedly she would use these phases, against the natural flow of the interaction. Praise in the research context is typically perceived as a positive strategy however, for the purpose of implementing II praise could be a barrier for interaction if not used at the appropriate time.

The concept of non-verbal language is important when considering the implementation of II. Laura recognises this and defines II as "The ability to communicate with another young person other than speech…" (Questionnaire 2). This demonstrates a theoretical awareness of the importance of non-verbal communication. However, this understanding has not translated consistently into Laura's practice. The reduction in verbal language supported a slower pace for the session and provided Laura with increased opportunities to draw on her use of non-verbal techniques such as using gesture and eye contact. Despite these opportunities there were inconsistencies and missed opportunities to utilise non-verbal communication. Eye contact and body language were sometimes observed within the videoed interactions but Laura never commented on her use of these skills in any of the VSR sessions. There were some changes in eye contact between Laura and Kerry during the project. During the initial baseline videos, there was limited eye contact between Laura and Kerry. Kerry often looked at the activity and appeared to engage with that rather than her communication partner. In the first post-training video Kerry was fixated on interacting with bubbles, and despite Laura's presence there was limited acknowledgement of her. Towards the end of the project there were some improvements in the use of eye contact and some spontaneous moments of joint engagement. To conclude the theme of changes in verbal language, this reduction was the most observable change apparent during the project. There was a clear reduction in the use of language, which provided an increased opportunity to use non-verbal communication.

4.2.3 b) Use of II techniques

The changes in burst-pause sequence (Hewett et al., 2012) reflect the two-way nature of communication and quality of interaction. These sequences closely relate to the pace and flow within an individual interaction and this concept was a key characteristic of change. The flow between Kerry and Laura's interaction changed over time impacting the overall quality and sense of a shared interaction during the project.

The pace of the sessions evolved throughout the project. The initial baseline videos revealed a significant amount of activities, up to eight within a five-minute session, compared to only one or two activities being used within the final videos. Laura shows some awareness of this change when commenting that "Maybe there were too many activities at one time to get her to concentrate on one" (VSR 4). Laura can see that a fast pace in the session did not promote Kerry's engagement. Laura could have felt, as she was being videoed, that she needed to be proactive and encourage Kerry to take part in all the activities.

The pupil-led interaction relates to Kerry taking the lead and beginning an activity or interaction through her own means, which changed within this unit. The baseline videos showed Laura to take the lead on activities, but after the training, there were more examples in which Kerry initiated engagement. During the post-training questionnaire Laura wrote that in II she should "always follow the young person's lead, don't over impose yourself on the individual" (Questionnaire 2). This understanding was particularly significant as she was observed during the baselines to have always led the interaction with Kerry. The number of videos which demonstrated occasions of pupil-led interaction increased, and when watching an example of this Laura commented on how "…She [Kerry] pointed to the foot spa so I engaged with it straight away…" (VSR 3). This demonstrates the change of focus within the interaction to become more pupil-led; Laura sometimes provided Kerry with opportunities to lead in the interaction.

4.2.3 c) The use of activity

Kerry was initially withdrawn and aversive to interaction, her baseline motivation to interact with others appeared very low. To increase Kerry's engagement in interaction, developmentally appropriate activities were included in the project. Activities can be used to support interactive sequences with a communication partner. Laura commented in the VSR that "[blowing lip whistles] …when she blew it, I blew it…she would blow it after me, for me to blow it" (VSR 2). This sequence demonstrates that an activity can provide turn-taking opportunities and promote shared attention; this was sometimes observed within the videos between Laura and Kerry. However, the way Laura typically utilised activity throughout the project was seen to limit interactive opportunities.

Laura was focused on gaining Kerry's participation in an activity or object, rather than using this to structure their interactions and encourage interaction with a partner. Laura discusses her focus on the activity she is using during the VSR "… I try to instruct her and lead her and show her what to do with the activities available…" (VSR 3). This may demonstrate that Laura is not focused on the implementation of II and Kerry's social communication, rather she is absorbed in modelling the activities and this may detract from II.

4.2.3 d) Challenging behaviour reduction

The reduction in CB was an evident theme within this project, which as both a researcher and head teacher I considered to be important. As previously discussed in Kerry's case, she could display very intense self-injurious behaviour, but as the project developed Kerry was observed to present with less incidents of CB. Laura also identifies this change, as she asserts that the behaviour of Kerry is typically unpredictable and challenging but during the VSR of the II session she stated "…She hasn't had one incident at all and that is quite rare for Kerry because she would have had at least one" (VSR 3). This relates to Laura's understanding of Kerry's typical behaviour, as she feels it was unusual, she then offers a possible explanation for this "... Because I think she was totally focused on the task and enjoyed the activities" (VSR 3). Laura felt that it was unusual for Kerry to participate in an activity in this way for a significant period of time, as her typical behaviour can be challenging and interfere with interaction. The changes in CB were a positive change that occurred.

4.2.4 Training on II and general competence

Laura had started the project with a limited understanding of II. Laura's previous specialist educational background was also limited as she was fairly new in her TA post. This could have been an advantage as perhaps she was able to change her practice and did not have engrained practice, which arguably may be more difficult to change.

Laura was seen to benefit from the training and sometimes utilise the basic principles of II. This can be measured by some of her responses to the questionnaire data and the VSR data that demonstrated some learning in response to II specific techniques.

Throughout the implementation process Laura was primarily focused on gaining Kerry's attention and using activity as an instrument to structure her interactions with Kerry. Laura was seen to make some changes to her practice mainly through reducing her use of verbal language. Laura utilised one of the intervention strategies to support her competence as a practitioner, she was receptive to the VSR data tool. The video data showed that Kerry was receptive to these changes but the sessions were focused on activity rather than reciprocal interactive sequences.

4.2.5 Summary of Laura and Kerry

In the dyad of Laura and Kerry, there appeared to be one main event that provided the catalyst for change. In VSR 1 and 2 Laura watched herself with Kerry and quickly commented on her use of verbal language and how she felt a need to reduce this. This point was re-visited and commented upon many times and it did shape other points of the implementation process. An example of this was in the warm/cool feedback session where there were extended conversations about reducing verbal language.

One reason for Laura's change may be due to an increased theoretical understanding of II. It appears that the change within this case was overall a practical change, rather than a reflective approach to implementation. Laura employed a practical style of interaction and development. Laura tried new ways of working and based on Kerry's responsiveness she made adjustments to the barriers observed in terms of II, through reducing verbal language, and this supported other II techniques. Due to the reductions in verbal language the pace of the sessions changed and this had positive benefits in terms of some burst-pause sequences and isolated joint engagement opportunities. In this sense Laura may have drawn on a trial and error approach that had positive outcomes rather than a deeper and internal level of change.

Another key learning for this unit was the responses Laura received from Kerry, through a thorough analysis of the data, it is clear that Kerry responded to Laura by smiling, engaging in activities for longer periods of time and sharing some interaction in between the activities Laura had arranged. This was a reinforcing variable that Laura identified as a positive reaction from Kerry.

4.2.6 Conclusion

In this unit changes were observed in practise following the baseline videos VSR 1 and 2 (Figure 7).

Video stimulated recall (VSR)	**Body language**	**Activity**	**Communication**
VSR 1 VSR 2	Guides pupil to chair	Uses lentil activity	Verbal requests
	Brief activity engagement	Brief activity engagement	Brief activity engagement
VSR 3	Tapping bubbles	Water tray	Reduced verbal language

	Activity engagement	Activity engagement	Brief social interaction
VSR 4	Close proximity (No touch)	Foot spa	Brief non-verbal communication
	Activity engagement	Activity engagement	Brief social interaction
Key to coding			
Practitioner	Significant Change	Some Change	No Change
Pupil	Significant Change	Some Change	No Change

Figure 7: Responses to Implementation – Laura and Kerry

In conclusion of this unit, throughout this project Laura's practice has developed. There has been a perceived change in her ability to implement II strategies, such as observing an increased amount of burst-pause sequences and pupil-led interactions. The significant change that is identified in this unit relates to the reduction in verbal language, this encouraged a slower paced session and a flow of positive interaction. This unit also highlights how Laura's change in practice led to some positive outcomes for Kerry, including occasions of increased eye contact, more available body language and sociability. It is relevant to consider the beneficial effects observed with Kerry as possibly a sustaining factor attributed to the process of implementing II. The process of change was relatively quick in response to the VSR, including a change in Laura's communicative style. This supports the understanding that staff can implement II strategies within their practice.

4.3 Unit Three – Jenna and Kerry

Here I present the dyad Jenna and Kerry. I focus on the specific II techniques that were finely tuned and developed within this case, drawing on a critical analysis of the sophisticated skills that Jenna uses when interacting with Kerry.

4.3.1 Unit background

A key consideration of Jenna's background is that she had already received training in II prior to the project. The experiences Jenna had in II influenced her initial position in understanding and implementing the approach, as evidenced in the baseline videos and initial questionnaire, where she outlines her pre-existing knowledge. Jenna's previous training impacted her skills in this project and she was keen to receive additional training in II. Jenna therefore had a different starting point from the other cases, as she had a previously developed foundational knowledge in II. Jenna also had previous experience in a different school of successfully using II with another pupil that she felt had positive outcomes. In Jenna's case, she was revisiting learning that had been acquired and she would have been able to build on this understanding through reflecting on her practice.

Jenna had been teaching Kerry since her placement commenced at the school and already used an II approach with Kerry. In Jenna's role as a teacher she typically would have less daily opportunities for interactive sequences with Kerry than the TAs who consistently supported her. Kerry's background was discussed in the previous unit and the rationale for her inclusion in the project was explained in the methodology chapter.

4.3.2 Case narrative

4.3.2 a) Baseline Data: Prior to II implementation

Researcher description from video observations:	**Jenna's Video stimulated recall:**
Body Language	
Kerry begins the session by initiating several circular movements around her classroom and moves towards the pasta tray. Jenna mirrors Kerry's movements slowly but Kerry does not seem to recognise the similar patterns of movement.	"I think on this bit, she is not bothered about me being there at all. I think she is not totally bothered at all about what I am doing and I don't think she has any awareness …She will entertain herself with that for a few seconds and then start spinning again" (VSR 1).

The baseline data captures Jenna implementing an II technique; in this instance, she is using imitation. Jenna shows an understanding of Kerry’s cues in the VSR that despite her mirroring Kerry’s body spinning, she appears to be locked into her own activity and does not seem to be aware of Jenna. Jenna identifies this, which indicates an awareness of Kerry’s inability to engage at that moment in time and this matches my observations of the session.

Researcher description from video observations:	**Jenna’s Video stimulated recall:**
Activity Kerry and Jenna are both immersed in an activity, blowing whistles to form a high-pitched whirling sound. Kerry has her own whistle first but quickly takes notice of Jenna’s, she disregards her whistle leans towards Jenna closely, gazing and smiling at her.	“That’s me going (blowing) back at her and she is doing it again I think she was about to start whistling…and she engages quite nicely there. Every time I blow she blows…She has thrown hers there for me to do it after her and I am fairly sure it was the air as much as the noise, that is why she’s doing it” (VSR 1).

The whistle activity in the baseline captures a communicative sequence where turn taking is used positively to engage Kerry; she is engrossed watching Jenna using the whistle. Jenna reflects in the VSR by describing why Kerry may be enjoying the activity. This goes beyond a simple descriptive account; rather she seeks to understand the multi-sensory components of the activity to explore her interactions.

Researcher description from video observations:	**Jenna's Video stimulated recall:**
Communication After a lengthy II sequence Kerry stands up and moves away. Kerry re-engages by moving in circular movements around the room. Kerry then begins to use her vocalisations rhythmically, and Jenna joins in by mirroring her noises.	"I think that is her kind of zoning out a bit after that sort of proper interaction. I think this is her stepping back a bit for her own sake because she will do it for a while and she almost needs a break herself… she does seem to monitor that interaction and engagement and that spinning is kind of her time out… That is unusual to hear her sort of almost singing like that. That noise is more familiar, but she was almost kind of a bit tuneful for a few seconds there" (VSR 1).

Jenna recognises Kerry's wellbeing needs to take a break; she understands the impact that an interactive sequence can have on Kerry. Interaction with others is a skill Kerry is currently developing however, it is rarely observed and therefore engaging in this activity could be difficult for her. Jenna states that she might 'need a break' after an II experience and also considers the way in which Kerry does this through spinning her body, this reinforces that Jenna has an understanding of Kerry's behaviour. Kerry is also observed to vocalise rhythmically; she appears to express intense enjoyment in this session. Jenna also considers this to be an unusual pattern of Kerry's behaviour. This extract from the VSR demonstrates a level of reflection in practice through the experience of the pupil, Kerry.

4.3.2 b) Implementation phase: following II one day training

Researcher description from video observations:	**Jenna's Video stimulated recall:**
Body Language Jenna is kneeling on the floor next to Kerry using a lentil activity. Jenna takes a handful of lentils and releases them slowly, she mirrors Kerry's sprinkling of the lentils. Kerry then uses her index finger to make marks in the lentils; Jenna imitates what Kerry is doing and she immediately takes notice and places her hand on the mark Jenna has made.	"I find it interesting how she really looked to see what I was drawing on the carpet because to see her mark making in there is something we don't typically see from her. She has always sprinkled, but doesn't really trace and for her to actually pay attention to what I was doing alongside her. I was amazed that she did that. I didn't expect it at all" (VSR 3).

There have been several occasions where Kerry has shown new and emerging skills in relation to both interaction and learning, identified by Jenna. These were discussed following the VSR session and Jenna stated how these learning opportunities would be followed up and extended to develop these new skills. Due to the responsiveness and skill of the II practitioner Kerry is being given the opportunity to develop her skills in the moment, with them being responded to and reinforced during the session. As discussed, Kerry makes a mark with her finger and when Jenna copies the mark in the lentils Kerry responds by placing her hand on top of the mark that Jenna has made. This shows Kerry's level of engagement with the interaction and this is a skill that rarely has been observed, also this reciprocal activity lasted for a longer period of time than usual.

Researcher description from video observations:	**Jenna's Video stimulated recall:**
Activity Kerry prompts Jenna to sprinkle the lentils by pushing her hand down. Jenna then reads this as Kerry's cue to begin dropping the lentils in a slow and attentive manner. Kerry then touches Jenna's hand and pushes it away. They continue an interactive sequence through	"Kerry is moving her hand underneath mine there, so I am taking this as a signal that she wants me to carry on doing it. Then she quite clearly pushes my hand away" (VSR 3).

using mark making. Throughout the session Kerry is observed to push Jenna's hand away on four other occasions.	

When Kerry was pushing Jenna's hand away she tentatively observed Kerry's cues to respond accordingly. In the videos Jenna is seen to continually wait for Kerry's responses to initiate the next interactive sequence, this enables Kerry to lead the activity. In analysis of the session immediately after the II training, the pace of the activity is strikingly slow but it seems to allow Kerry's engagement and provide her with opportunities to engage at a pupil-led pace.

Researcher description from video observations:	**Jenna's Video stimulated recall:**
Communication Throughout the session Kerry remains socially available to Jenna, leaning towards her, smiling and vocalising. Kerry initiates increased interaction with Jenna through her laughter.	"She actually starts laughing there and I am not quite sure what she was finding so entertaining, but she was laughing at something, but I don't quite know what it was" (VSR 5).

Throughout this session Jenna was utilising techniques that elicited positive responses from Kerry. Jenna facilitated Kerry to lead the interaction by responding to her cues to stop and start the interactive sequence. This is an example of the pupil leading the interaction not only the activity. Jenna describes Kerry's laughter and comments that she doesn't know the reason for this response. It is interesting that Jenna does not offer an explanation for Kerry's laughter; this indicates that she is unassuming of Kerry and does not presume to know the stimulus for laughter but only uses Kerry's observable behavioural responses to judge her communication.

4.3.2 c) Completion of implementation strategy

Researcher description from video observations:	**Jenna's Video stimulated recall:**
Body Language The session involves calm music playing in the background and Jenna and Kerry are sat together underneath a parachute, which Jenna is holding up with her arms. Jenna uses her own facial expressions, including blinking, opening her eyes wide and blowing with her lips to positively interact with Kerry.	*Jenna comments on the environment stating:* *"... I guess in many situations we have created environments that are known to contain things that we know that she enjoys interacting with" (VSR 4).*

During the VSR, Jenna comments that she adapted the classroom to support her interactions with Kerry. Jenna displays an awareness of the impact of the environment in promoting Kerry's engagement.

From my observations of the video clip the parachute seemed to limit external influences and focused the interaction between Kerry and her communicative partner. In a socially supportive environment Kerry appears more able to sustain interactive sequences with Jenna, who draws on her facial expressions to gain interest and maintain a close interaction with Kerry.

Researcher description from video observations:	**Jenna's Video stimulated recall:**
Activity Kerry is observed during the interaction underneath the parachute to make facial expressions and eye contact. When Jenna responds Kerry smiles and then pauses followed by opening her eyes wider. Kerry was observed to use eye contact in several extended interactive sequences with Jenna.	"Kerry quite quickly became very interested in what I was doing which in other sessions sometimes it takes quite a long time for her to get into it, but she has very quickly become interested in me joining in with her or linked to what she is doing, but she had joined me and wanted me to play with her as well" (VSR 4).

In the final videoed sequence between Kerry and Jenna, eye contact is promoted and sustained by a variety of subtle changes that Jenna implements in response to Kerry's actions. These include opening her eyes wider, blinking, opening her mouth wide and blowing her lips towards Kerry. Jenna responds intuitively to Kerry's eye contact and cues, by pausing and then mirroring the desired facial expression. During the final interaction, there is a difference in the type of activity that is being utilised. Previously Kerry and Jenna were engaging with structured activities such as lentils, pasta and bubbles to facilitate their communicative exchanges. In the later interactions, the structured activities are now replaced with facial interactions between Kerry and Jenna, therefore activities now are not the focus of the session. In the final interactions, the parachute is the only piece of equipment that has been used, however this simply serves the purpose to frame interaction as it creates a lower stimulation environment that minimized distraction and promotes closer proximity.

Researcher description from video observations:	**Jenna's Video stimulated recall:**
Communication The video sequence showed Kerry making circular movements with her entire body, and then she fixated her eye gaze on Jenna and leaned closely towards her. Throughout the five-minute video clip Kerry does not seem to pause or withdraw from the interaction with Jenna at any point, eye contact and smiling are continuous responses that Kerry displays throughout the final	"I'm just totally tuned in with what Kerry's doing really; not a lot of my own thoughts are going through my head. Just kind of observing and reacting to what Kerry is doing" (VSR 4).

video.	

In the initial baseline video Kerry is observed to need to take a break, this is contrasted with the final video where she is able to sustain a continuous interaction throughout the video clip. Jenna comments on how she is tuned in to Kerry, she does not anticipate how her interaction with Kerry will develop but continues to respond simultaneously to Kerry's cues that provide an in-sync and sustained social communication between both partners. From observations of the videos I consider Jenna's ability to respond to Kerry in a fine-tuned manner, providing her with a sophisticated skillset to implement II, Kerry is seen to be entirely receptive towards this approach.

4.3.3 Key themes of unit three

From thematic analysis of the data sets in this case, the key themes which emerge relate to a) Jenna's use of body language, b) the use of imitation, c) pupil-led interaction, d) burst-pause sequences and e) finally the refined techniques that Jenna implements.

4.3.3 a) Reciprocal body language

My observations of the video sequences identified the theme of reciprocal body language as important in this case. The theme of reciprocal body language is well recognised within the II field. The technique involves continually monitoring, reacting to and interpreting the pupil's response. Jenna was observed to continually use body language to promote social communication, which supported II with Kerry. Throughout the project Jenna used minimal verbal language with Kerry, instead her whole communicative sequences were through adapting her body language to respond to Kerry's cues on a moment to moment basis. This involved carefully positioning herself to mirror Kerry's posture and also adjusting her body language in response to Kerry's signal to pause their interaction. The skilful use of reciprocal body language was a means of facilitating interaction and eye contact from Kerry. Jenna discussed in the VSR that:

> "I have moved my body position a lot lower there and it was only at this point that she actually started to give me more eye contact. She had been indifferent from an eye contact point of view and she was purely using me as a tool to carry on with her play, but I think this is where she started to really want me to join in" (VSR 4).

This supports Jenna's understanding of her own body positioning as she recognises that moving herself lower, underneath Kerry's eye level promoted opportunities for II as it was easier to gain Kerry's eye contact. In this example Jenna comments on her use of body language as the primary means to encourage Kerry's desire to interact with her. The body language within this case was perceived to be reciprocal as both Kerry and Jenna were in tune with each other and the body positioning between them was in harmony and this aided further engagement opportunities. The use of body language was observed when they were interacting on a balance board together and Jenna commented that "I moved back to try and balance a bit more and she took that as 'that's finished' and moved herself…" (VSR 2). This supports Kerry responding to Jenna's body language, as she has moved further away from her, Kerry took this as a signal to pause the interaction and body language was observed to become more withdrawn in the video clip.

4.3.3 b) Imitation

Throughout the project Jenna frequently used imitation as a communicative tool to support interaction with Kerry. Her use and thoughtful understanding of imitation enables Jenna to introduce slight variances to the imitations to allow Kerry to expand her repertoire of communicative tools:

> "I think I do a lot more mimicking of her than perhaps trying to move her on and suggest new things, but I think Kerry is still at quite the early stages really at the moment, but it seems to work for us to do it that way than to try to move her onto the next step" (VSR 4).

Jenna is observed to slightly extend the communicative dialogue between herself and Kerry on the video clips and Kerry responds by looking for longer periods. She discusses building on imitation to vary and alternate similar patterns of engagement. Jenna's understanding of imitation in relation to Kerry's current ability is clear. Jenna would like to build on imitation to create a broader means of interaction but perceives Kerry's current level of engagement to be less responsive to these attempts. Therefore, Jenna is observed to continue with imitation techniques as this leads to a positive and sustained interaction between both Kerry and Jenna.

4.3.3 c) Pupil-led interaction

Throughout this case Jenna continuously takes Kerry's lead during their interactions, she sensitively tunes into Kerry's ways of communicating to allow Kerry to direct the session and she writes:

> “It starts by confirming to the child that their actions etc. are valuable and interesting to you as an adult and they are fine with what they are doing…” (Questionnaire 1).

Jenna’s response to questionnaire one evidenced her prior knowledge of the importance of pupil-led interactions. This was further developed when she explained that “The lead in the majority of interactions must start with the young person” (Questionnaire 3). The questionnaire data highlights that Jenna’s initial awareness of pupil-led interaction had increased and she had developed further understanding. In the video data Kerry would lead the interaction between them, and Jenna would respond accordingly to support II.

4.3.3 d) Burst-pause sequences

From the beginning of the project Jenna utilised pauses in response to Kerry’s cues, these pauses controlled the pace of the session and allowed for a sustained communicative sequence. Jenna effectively deployed the burst-pause sequence throughout the video clips:

> “It was a very natural and interactive flow…without words. Each partner was contributing and responding, there is nothing rushed. It is just a very slow and calm paced session. On a few occasions, the pauses do seem quite long, however following these Kerry does initiate interaction and it would appear that she requires longer processing time” (Journal Entry).

Within the extract, as with the video data it was apparent that the content and pace of interactions between Kerry and Jenna was relaxed and naturalistic. The burst-pause sequences appeared to change and develop during the implementation process; the pace was visibly slower during the later II videos. Jenna was observed to utilise much more pausing, which increased during the interactive responses from Kerry. The slower pace provided more opportunities for burst-pause sequences and I consider this to be a positive feature of Jenna and Kerry's interactions. The increased length of responses from Kerry and the longer sequences of interaction are a positive outcome that was not necessarily predicted as there was no prior experience of this with Kerry.

4.3.3 e) Refining II over time

Jenna reports that she has refined her techniques as a communication partner. In relation to the impact the training had on her practice she wrote in the final questionnaire that "It has reminded me of the finer points which I have been able to use to ensure my practice is beneficial for all parties" (Questionnaire 3).

In the questionnaire data Jenna reflects that she began the project with previous knowledge of II and the training opportunities have allowed her to develop this further. From my observations of the video data there have been specific areas of II that Jenna has fine-tuned and improved, particularly around body language, imitation, burst-pause sequences, and a pupil led interaction as discussed in the themes of this case. In relation to body language Jenna showed subtle changes that she directly attributed to the training within this project, during the VSR Jenna commented that:

> "I think the idea to get lower than her, I wouldn't necessarily have thought about doing that before the training. It took me long enough to realize, but getting underneath her... I think that has definitely come from the training" (VSR 4).

This relates to Jenna making subtle changes to her body language to become lower, this is considered to support Kerry's interest in eye contact, or perhaps encourages her to feel more comfortable or safer with the interaction. From the changes Jenna is seen to make, she presents as particularly receptive to training, which contributes to the improved techniques observed in her practice. The VSR highlights subtle changes in Jenna's ability to employ burst-pause sequences. As the project progressed Jenna was observed to pause more, leading to a slower pace within each of the later sessions. This allowed for Kerry's responses including behaviours such as laughing, singing and gazing at Jenna, the frequency of these increased as the sessions continued and are considered to be rarely seen positive responses from Kerry.

4.3.4 Training on II and general competence

Jenna began the project with a detailed theoretical understanding of II as demonstrated the initial questionnaire:

> "A published researched style of interaction based on infant-caregiver interactions. Various stages starting with mimicking actions/vocals etc. of the pupil which can ultimately be used to develop strong relationships and provide a method for supporting learning" (Questionnaire 1).

It is clear that Jenna understands how II as an approach was developed, through infant-caregiver interactions. Jenna was observed in the baseline videos to interact with Kerry and implement II in practice. Previous themes have highlighted that Jenna had drawn on II techniques such as mirroring, using social body language and allowing Kerry to primarily direct the interaction. She was already implementing II at the start of the project based on her previous training in II and her on-going utilisation of the approach.

This leads to consideration of training and II competence: on whether an effective II practitioner has a natural communicative style and/or whether it can be learned and developed through II training opportunities. This explicitly links to the research question as it relates to an individual's ability to implement an II approach.

Jenna has an II supportive style to her interactions and her skillset has developed during the project. She was receptive to II training and she was able to refine and fine-tune her techniques.

Some theoretical learning and refinement of practice is evidenced through the VSR, I now consider Jenna's individual learning within this unit. Jenna identifies that she has employed reflective skills during this project, as she stated in the final questionnaire that:

> "The opportunity of watching it through and then thinking back about which things she really enjoys and almost how we can further it, so I have implemented it as part of that practice…" (Questionnaire 3).

Jenna identifies that the VSR was a positive methodological tool that provided her with the ability to watch the session back and reflect on what she saw. This importantly supports the use of the VSR as a research and practice tool as it encouraged Jenna to reflect. This research tool has supported the intervention by enabling the practitioner to observe and reflect on their practice in relation to the intervention points. Jenna's reflective capacity is a central ability that supports the process of implementing II.

4.3.5 Summary of Jenna and Kerry

The summary of this unit is structured using Jenna's final VSR responses as she identifies the three key influences that have been important in her ability to implement II during the project. She stated:

> (1) "Kerry's willingness and her enjoyment in the engagement and knowing which bits she particularly responds to and what we can bring on."
>
> (2) "The opportunity to review the interactions would kind of fit in with that but is an important second one, but it's good watching it back thinking she's done this, she hasn't done this."
>
> (3) "The training as well, the opportunity to refresh because I have previously done the training, but it was a nice opportunity to refresh my knowledge" (VSR 4).

Importantly for this unit in (1) Jenna refers to Kerry as a responsive partner, and this is supported in the video data. Kerry often responded favourably to the II techniques Jenna implemented. This was also discussed within unit 2. I feel that Kerry as a pupil, who was responsive to II, had promoted a shared positive experience, leading to both partners enjoying their interactions; this will have reinforced Jenna's fine-tuning of techniques as an II practitioner.

In (2) Jenna refers to the benefits of using VSR as a learning tool. This has helped her to think about her interactions with Kerry and how to build on these. This relates to her ability to reflect and improve, which encouraged her to skilfully implement an II approach within this unit, as previously discussed.

In (3) Jenna referred to the training as a 'refresher' for her and this is a key point for this unit. Jenna was aware of her advantageous starting point in this project and was receptive to the training that was offered.

Jenna's skillset as a teacher and her professional background may have further enhanced her ability as an II practitioner, for example professional training could have supported and developed her reflection skills. Jenna could have experience of training in a theoretical context as her course will have included lectures and required skills to access the learning materials, which could explain her responsiveness during II implementation. Jenna's familiarity with this style of training could have promoted her engagement in the course led by an external trainer.

It is noteworthy that teacher training typically develops practitioners to lead a class, this is in direct contrast to the principles of II, which is pupil-led. This could have presented Jenna with a challenge due to the contrasting difference in training, however Jenna's background in specialist education is more likely to help her become more aligned with individual child-led approaches, such as II. The research context is uniquely designed around meeting individual needs, therefore a teacher within this educational organisation may be better equipped to implement II, due to the staff resources and teaching structure employed. Jenna had extensive experience of teaching at the school. This will have required a flexible approach, in order to meet the individual needs of the pupils. Jenna's experience will therefore have shaped her perspective as a professional.

The warm/cool feedback session may have been less significant for Jenna, in comparison with the other participants. During the warm/cool feedback session the purpose was to allow other professionals and practitioners to collectively reflect on the II sessions, and to understand and suggest future improvements for the practitioner. Throughout the project Jenna has demonstrated a level of intuitive reflection and self-awareness, she continually responded to Kerry's cues and developed her own refinements to practice. Jenna already had the skillset and the reflective capacity to understand her interactions independently.

4.3.6 Conclusion

In conclusion of this unit there are many factors that have been discussed including, the professional background with the additional higher-level autism qualification which would contribute towards the skillset of Jenna and assist her starting point to have been at a higher level than other practitioners. It is also significant that Jenna had received the one-day training course before and so training acted as a refresher for her. Jenna had previous experience of implementing II and she felt that this was further developed and fine-tuned from this experience. The use of VSR assisted Jenna by providing an additional layer of reflective opportunity to review and re-assess her practice. This unit demonstrates a dynamic relationship and interactions between Jenna and Kerry, which have yielded some positive outcomes in terms of Jenna's refined skillset and also Kerry's receptiveness to this approach. Figure 8, as shown below, demonstrates the process of change in this unit.

Video stimulated recall (VSR)	**Body language**	**Activity**	**Communication**
VSR 1	Mirroring	Joint whistling	Mirroring
VSR 2	Activity Engagement	Interactive sequence	Interactive sequence
VSR 3	Mirroring	Sprinkling lentils	Socially available
	Extended interaction	Initiated interaction	Extended interaction
VSR 4	Mirroring with facial expression	Parachute	Tuned in

	Reciprocal interaction	Reciprocal interaction and eye gaze	Sustained social communication
Key to coding			
Practitioner	Significant Change	Some Change	No Change
Pupil	Significant Change	Some Change	No Change

Figure 8: Responses to Implementation – Laura and Jenna

This table demonstrates the various stages in the implementation of this unit and shows some changes in the baseline videos from the practitioner Jenna. These changes were as a result of her increased focus on II and utilising these techniques during the baseline videos and this was responded to positively from Kerry, these were brief encounters of interaction that at times were reciprocal. As the project developed, uniquely in this unit, there was significant change demonstrated by the pupil that was observable in the videos used for VSR in sessions 3 and 4. Particularly in VSR 4, in this session and some later sessions Jenna chose to use the parachute to frame the session and extend the social communication opportunities by visually reducing any other stimuli to enable focus on each other. The result of this enabled a five-minute interaction series to be developed and some of the behaviours of laughing, smiling and vocalising had never been seen in a series of interaction lasting that length of time before with the pupil Kerry.

Kerry was particularly responsive to Jenna and the development of II changed quite dramatically in such a short space of time that undoubtedly contributed to the positive changes within this pair. This unit showed the implementation of II to have positive outcomes for the pupil and important cues and learning points which could perhaps be trialled in the other cases. This unit demonstrates the changes over time that took place and many of these have showed how a skilled II practitioner has managed to implement a new approach utilising her skills of reflection both in the moment and reflecting after the sessions as seen in the VSR data.

4.4 Summary of the qualitative units

The summary of the first three units (Figure 9) outlines the changes observed in each dyad pair and it is clear that in unit one there was little observable change noted within the implementation strategy, any that was seen was not sustained. In unit two there was some change noted on both the practitioner' and pupil' responses. Unit three clearly demonstrated that there was significant change in terms of what the practitioner did and how that was responded to from the pupil by the end of the implementation.

Overview of change in each of the units

		Body Language	Activity	Communication
Unit one	Practitioner			
	Pupil			
Unit two	Practitioner			
	Pupil			
Unit three	Practitioner			
	Pupil			
Key to coding				
Practitioner	Significant Change	Some Change	No Change	
Pupil	Significant Change	Some Change	No Change	

Figure 9: The overview of Implementation in each unit.

Having considered the three units of staff/pupil pairings it can be seen that the implementation strategy had a very differing impact on each of these dyads. The staff responded differently to the training and other opportunities within the implementation of II resulting in varied outcomes for the pupils. There were significant variations between the units and the data collection tools and implementation points produced very different outcomes in each pair, despite two of the units involving the same pupil. In unit three the practitioner Jenna used the parachute to frame the interaction, this assisted Kerry’s engagement with the practitioner. It would have been interesting to observe the interaction with Laura, if she had also used the parachute, to see what difference this could achieve in this unit, however from close observation of all of the video data the quality of interaction between Laura and Kerry was felt to be at a different level and much more focussed on the activity Laura had chosen.

In unit two, Laura adjusted her approach to implementing II as a result of a practice change that she identified of reducing her verbal language. There was evidence in unit one, from Rebecca's responses to the questionnaire of some theoretical changes that Rebecca made but any minor adjustments shown within her practice were short-lived with no sustained changes made. In unit three, there was clear evidence of refinements made within Jenna's practice and the positive changes that enabled progression to be seen from the pupil, Kerry.

4.5 Questionnaire Findings

In this section I will discuss the questionnaire data that plays a secondary role in the research project. The three-point-in-time questionnaire measured the responses from the wider staff team and their responses were analysed to gain an understanding of their development, a) at the start of the project, b) after the training and c) at the end of the project. Some of the questions are intended to be developed and follow through each of the questionnaires, whilst others are specific to the point of time in the process (Appendix 6) for topic development and question linking sheet.

This section will be structured to address the questions raised and to demonstrate the progression throughout each questionnaire by using key themes. The process of generating the initial themes can be seen in the questionnaire analysis of initial codes (Appendix 7), where each of the respondent's answers are given and the number in brackets is the amount of times that a particular answer was given. This allows for some statistical representation to be given to enhance and triangulate the data sets. Caution must be applied to this section as, despite the 100% completion rate, there were only fourteen staff who completed the questionnaires and so the data can be changed significantly by one or two responses.

4.5.1 Starting points

The first question in questionnaire one is generic to ascertain the background styles of interaction at the start of the project prior to any training. The question asked was; 'What were the most important factors to consider when interacting with individual pupils?' Staff identified 'Knowledge of the individual' [Pupil] as the most significant factor and this was given by 36% of staff, other responses related to positivity within the interaction (14%), pupil-led interaction (14%) and pupil communication (14%). These responses demonstrated that a few staff identified important factors to be those that are promoted by II, although this was a small minority of the overall staff group.

4.5.2 Development of staff knowledge of II

The meaning of the term II was asked about in the next series of open questions and in the baseline questionnaire 28% of the respondents replied with 'infant care-giver interaction' half of these were given by the two teachers. The answers given by those who listed infant-caregiver interaction suggested that they all had some clear previous understanding of II as they also outlined a minimum of two II specific themes. The majority of staff (72%) gave written responses to state II was about relationship building and non-verbal communication.

This question was asked in questionnaire one and two 'What is your role in delivering II?' Questionnaire one had 28% of the responses state that it was a 'major part of the job role', and for pupils to 'enjoy'. There were also some responses as to how the approach could facilitate pupils to 'work towards their targets' and to ensure the 'pupils interacted with staff', this could indicate a lack of understanding of II as it was evident from other questions that all staff were not familiar with the term.

Questionnaire two produced a positive response to 'What does II mean to you?' The responses were much more detailed compared to those given in response to questionnaire one, 57% stated II was about 'interacting' and many respondents were able to write about specific II themes demonstrating that they had acquired some specific vocabulary from the training and some of this was used in a way which demonstrated that in principle they were aware of how to apply this following the training. II specific themes mentioned were 'turn-taking', 'pupil-led', 'imitating', 'joining-in' and 'pupil pace'. In comparison to the first questionnaire, 85% of respondents demonstrated an increased understanding of what II was and were able to identify one or more II themes. Given the question 'What does II mean to you in practice?' there were further examples of II specific themes that were elaborated upon. The written responses to both questions following training were encouraging in that the answers given demonstrated that staff had recalled how some of this knowledge could be related to their practice.

By the third questionnaire it was evident for both questions that some of the responses had less detail in them. This may have been attributable to the fact that this questionnaire was completed fourteen weeks after the training and perhaps naturally the participants may have less recall of the training at this point. Although the answers were shorter in length, some responses evidenced a change from the responses given following training and there had been a shift that had occurred in some of the respondents. An increased number of participants felt II to be about ‘communication’ 50%, ‘led by the young person’ 50%, and ‘relationships’ 36%. Two responses to the third questionnaire were about ‘reflection’ 14% and ‘environment’ 14%, these could be seen to demonstrate an increased understanding after putting II into practice during the fourteen-week implementation phase. Interestingly, the two questionnaires which showed no change in understanding or development of II between questionnaire one and two also showed no difference to demonstrate any learning of understanding in questionnaire three. Two respondents (14%) appeared to show how their II knowledge was developed further in terms of depth of understanding from questionnaire two to three. Some of the responses showed aspects of the training but 36% now highlighted one II specific theme in questionnaire three, whereas following training they were able to name two. By questionnaire three 50% of staff responded to state they believed their practice had improved, 28% stated that their understanding of II had increased.

By using the answers to these two questions I have attempted to consider the impact of the training on the development of staff’s II knowledge. I am utilising three distinct responses to the implementation process. These include staff who have been unable to utilise the opportunities and implement changes either due to individual or organisational barriers. Secondly, staff who have responded to specific interventions, such as the training, allowing the individual to adapt their responses to the given questions as they have made at least cognitive changes as a result of the training and finally staff who enhance and refine their responses and demonstrate an increased understanding by questionnaire three that would suggest practice level changes that have been developed by this process.

It is important to note that the questionnaire data reveals information about the wider response from the staff team in relation to one specific element of the implementation process and can only give an understanding of the impact of the training. There were fourteen staff members who accessed the training including those mentioned in the other units described.

85% of staff that completed the questionnaires following training made changes in their ability to cognitively understand and describe II. Two respondents did not show any improvements in their understanding. Two of respondents appeared to utilise and further develop the training as shown by their responses in questionnaire three.

4.5.3 Fun

This theme occurred in response to three main questions. The first time it was mentioned was in response to the question 'What does II mean to you in practice?' in questionnaire two. Following the training 50% of the staff cited fun as one of their responses, but this was not repeated in questionnaire three, so perhaps this theme was a key learning from the training but not how staff felt when they tried II in practice. As well as citing fun in response to this question additionally, in questionnaire two, when asked about staff's role in the process of delivering II, 28% of staff stated their role was to make II fun. The other reference to fun in questionnaire three, when asked about the key elements to embed and implement II, 42% of staff stated a fun/enjoyable approach. This had moved from their role in delivering where there were no references made to fun to a key element to embed.

4.5.4 Improved communication

This response of improved communication was given as a benefit of II to staff and pupils. Benefits for the pupils to 'improve communication' featured in all three questionnaires; 64% in questionnaire one; 36% in questionnaire two and 28% in questionnaire three. To improve communication with the pupil was given as a benefit to staff in questionnaire one 21%; this increased to 36% in questionnaire two and finally 21% in questionnaire three. To improve communication between both staff and pupils was stated as a benefit from some staff. Staff also commented on their role delivering II included 'effectively communicating with the young person' (21%) and to be 'available' for interaction and 'to be positive'.

4.5.5 Improved understanding and building relationships

In relation to the positive benefits of utilising II staff cited an improved understanding of the pupil, this was a common thread throughout the responses. In questionnaire one this response was given by 57% of staff, questionnaire two 42% and questionnaire three 28%.

Interestingly following training 50% of staff commented that a key benefit for them would be to 'build relationships' [with pupils] and this remained in questionnaire three where 50% felt II would benefit the staff member in terms of helping them build positive relationships.

4.5.6 Barriers to implementation

Questions related to potential difficulties and barriers to implementation began in questionnaire one with 28% of staff identifying the unpredictability of the pupil group as a potential difficulty, again this was asked after training with 14% of staff citing this reason. Following training 36% responded by stating staff confidence as a potential barrier and unpredictability of the pupil group. By the end of the project 21% responded with reluctance from the young person to engage, potentially this is what staff found when trying to implement II as this was the first occasion where this was raised. Three respondents who commented on questionnaire three cited they felt there to be no barriers to implementation. Other responses given in questionnaire three as potential barriers were 'staff not letting the pupil lead'; 'overstimulation of the pupil'; 'challenging behaviour' [of pupil] and 'staff confidence'. These responses to the barriers raised in terms of implementation fall into three distinct subsets. Firstly those respondents who felt there to be no barriers, secondly those who believed that the challenging nature of the pupil cohort could present as a barrier and finally staff's behaviour of implementing II principles was deemed to be a potential barrier.

4.5.7 Embedding and implementation

The key elements to embedding and implementation of II were questions raised in questionnaire two and three. The responses given following the training were heavily focused on monitoring forms 36%, and evaluations of the sessions 21%. These responses seemed to be included in the post training questionnaires as this was featured in the training, however by questionnaire three no responses were given in this area. Instead the majority of staff wrote that the key element to embed was a 'pupil-led approach, 50%' and a 'fun/enjoyable approach, 42%'. Other responses to the question 'Which key elements are required to embed II?' were 'eye contact', 'use of body language', 'understanding the approach' and 'turn-taking'. The staff were asked at the end of the implementation phase, in questionnaire three, whether staff had received adequate training and support to develop, practice and implement II within the school. The answers given to this were that 86% of staff felt they had received adequate training whereas 14% felt they needed more training.

4.5.8 Conclusion of questionnaire analysis

The analysis of questionnaire data from the wider staff group who received the II training supports the other findings. Course participants had recall from the training, as evidenced by their responses to the questionnaire two. However, when these questions were revisited after a fourteen-week period some of the information provided contained less knowledge.

This provides an overview of practitioner responses to the training and some staff included in this cohort also had other implementation points as part of this experience. Following a training course as part of an INSET day it would be usual for staff to complete a questionnaire to comment on their response to training and to record any key learning or future training opportunities required.

These units will be considered further in the next discussion chapter where the significant lessons learnt, individual dyad responses and impact on the II implementation will be examined further. The whole concept of implementing a new approach impacting on the change process in a special school setting will be discussed in relation to the learning in each of these areas.

Chapter 5: Discussion

In this chapter I will discuss the data reported in the previous chapter and reference this against the literature to argue that the success of implementing II in a specialist school setting is dependent on the pairing of the pupils and practitioner. Units one to three represent dyads consisting of a practitioner and a pupil, in one unit the practitioner is a teacher and in the other two they are TA's. The fact that one pupil is featured in two of the units has provided some useful data as the outcomes for the pupil in the two units were at different levels. As the three dyads demonstrate significant variance in the implementation of II, I will explore this in relation to the definitions of II and the suitability of the approach for pupils with autism.

A better model is needed to understand how practitioners can progress in using the II method and I will propose a "Ladder of Intensive Interaction Techniques" (Figure 10) that is aimed towards progressive development of the skills required by practitioners. The focus in the II literature is on the progression of the pupil and their developmental progression (Nind and Hewett, 1994; Firth et. al., 2010) and as the findings from this project are that the progression of the practitioner is intrinsically linked with the outcomes for the pupils a better understanding of the process of change and professional development is also needed.

In this project, the training was initially the same for all staff (albeit with some prior knowledge for one) and it is interesting to note the significant differences in outcomes for the pupils. Following the implementation in a specialist school setting a model of professional development is proposed (Figure 11). These levels focus on the practitioners' development and the methods that were utilised to support the practitioners as the research methods also became effective training tools in this process. The model also considers the starting point of the practitioners as this has been demonstrated to be of importance when implementing change in an educational setting (Verhulst, 2012). The findings from this project suggest that introducing an approach like II for multiple dyads is unlikely to be tidy with even results and so on-going oversight, analysis and contingent intervention is critical for leaders if they are to maximise the effectiveness of the intervention.

5.1 Definitions of II and autism

Throughout the literature review it appears that defining II and determining whether it is successful or not is complex and unclear as the language used to describe the II approach offers only vague definitions (Hewett et al., 2012). II has been described as a process that involves providing pupils with an experience that is positive and has the result of them feeling socially included and emotionally connected (Hewett et al., 2012). One central assumption of the II approach is the expectation that all pupils follow a typical developmental trajectory, as based on the infant/caregiver research that II derived from (Nind and Hewett, 1994) and it is assumed that if pupils have not developed the fundamentals of communication they would benefit from II. However, the literature around autism describes how difficult pupils find social interaction, including interpreting and understanding eye contact and body language (Jordan and Powell, 1995) yet the II approach relies on utilising these non-verbal communication skills to engage with autistic pupils (Hewett et al., 2012). As defined by Nind and Hewett (2005), II involves utilising interpersonal skills, including body language and facial expression to build positive relationships with the pupils. Based on the findings from this project there are no grounds to argue that the approach is unsuitable for pupils with autism and the lack of progression in one of the cases can be attributed to the practitioner being unable to implement the approach. When an expert II practitioner delivered II to the pupil Jacob, he responded to the approach.

5.2 The sample group

The small, non-random sample size affected external validity and the extent to which generalisation could be made. However, a larger sample size across various settings could have compromised the quality of the data collected or it would have required a larger research team and a significant increase in resources (Denscombe, 2010). This limitation has been somewhat balanced by the rich qualitative data that was collected in a real-world context. It has been argued that a more realistic field setting produces stronger variables and as such, more valid generalisations (Yin, 2014; Lines et al., 2015) and being a practitioner researcher allows the creation of living theories based on explicit and particular circumstances (Drake and Heath, 2011). Lines et al. (2015) make the case that a case study approach to research generates a demonstrated and documented practical application.

Although the sample group was selected on a non-random basis, it was somewhat directed by the roles the individual practitioners had within the school. As the pupil group was set by the identified need of implementing II, the practitioners that were currently delivering their education were selected to participate in this project. This ensured very little disturbance to the pupils, however, it may be that the practitioners selected were not the most suitable to implement II. The challenges presented by the individual pupils may also have been a factor to consider in relation to the progression seen in the individual units. That said, it is important to point out that a school leader looking to implement change has to work with the staff at their disposal, so understanding this process with typical people is valuable.

Educational change and professional development depends on what teachers do and think which is influenced by micro factors such as local conditions, attitudes to staff in the institution and positive pressure and macro factors like legislation, policies, societal values and beliefs and attitudes towards the profession (Drake and Heath, 2011; Fullan, 2016; Clarke and Hollingsworth, 2002). Significant educational change consists of changes in beliefs, teaching styles and materials that can come about only through a process of personal development in a social context (Fullan, 2016). The practitioners selected for this project all have different backgrounds and part of the change process involves coming to terms with the multiple subjective realities that form the foundation for the change to happen in practice. Change comes about when practitioners become more confident, critical and articulate as to why they adopt a particular effective strategy but as Fullan (2016) and Hattie (2009) argue, not all practitioners have the ability to change.

5.3 Implementing Intensive Interaction

In this project II was utilised as the vehicle for changing practice within a specialist setting. The implementation phase was planned around the fact that baseline data demonstrated a significant gap in both experience and knowledge in the three practitioners. This was not anticipated to have much impact on the implementation as any practitioner should be able to implement the approach following training in II principles and practice tools (Hewett et. al., 2012). The findings of this project did not support this. The three dyads demonstrated a significant difference in the progression made by the pupils and this raised questions about the suitability of the approach for the individual pupil, however, on further examination of the data, it seemed to be that the pupil's progression was intrinsically linked with the practitioner's progression. This is an important linkage that is not discussed in the literature but is highly important for those overseeing similar change programmes. However, these findings concur with the theoretical underpinning of Transactional Model of Child Development (Sameroff, 1975) and intersubjective theories (Trevarthen et al., 1998; Dant, 2015).

I will now discuss and summarise the interaction style and findings in each dyad. In the dyad with Rebecca and Jacob, Rebecca failed to make meaningful changes in relation to the implementation of II and this impacted Jacob, his behaviour remaining unchanged throughout. The relevant II techniques remained static throughout this unit and there were missed opportunities for change. Due to the lack of progression I describe Rebecca as the *Stayer.*

The differences in progression of practitioner ability are best illustrated between cases one (Rebecca) and three (Jenna). Jenna used the II approach throughout the project and utilised many of the II specific themes and these were fine-tuned during the implementation. Jenna demonstrated high levels of reflection in her VSR and questionnaire responses and for this reason I have termed her as the *Reflector.*

The progression is less apparent between Laura and Kerry (unit two) than for Jenna the *Reflector*. However, when Laura identified that she needed to reduce her use of verbal language from observing the video in the VSR sessions, she demonstrated a change in how she interacted with Kerry with a distinct difference in the way in which she utilised interactive techniques. The reduction in verbal language has influenced the practitioner's II practice and so I describe Kerry as a *Changer* to reflect this.

I am going to use examples from the intervention phase to explore in more detail the progression made, or not, in the three dyads.

Although these remain units within a small-scale local study, by using these more general types of the *Stayer,* the *Changer* and the *Reflector*, I am considering whether there are more general properties in this case that might be seen in other contexts or with different interventions.

5.3.1 Lack of progression in the *Stayer* (Rebecca)

Through analysis of the data sets Rebecca was often seen to adopt a staff-led approach and this is line with a societal view of a teacher's role (Arduin, 2015). However, her interaction style is not in line with the II philosophy and core principles, which allows the pupil time and opportunity to respond (Nind and Hewett, 1996). Rebecca did not often pause during her interactions with Jacob. In their study, Kossyvaki et al. (2016) found that practitioners reported that they sometimes found it difficult to wait as they tended to anticipate what the children wanted. This could be the case for Rebecca, however, to pause and allow interactive opportunities is considered a more skilful technique when implementing II, as discussed in the literature (Firth et. al., 2010).

The second consideration was how Jacob responded to Rebecca, as he generally seemed to want to engage in his own behaviours of pacing, vocalising and withdrawing from interaction as he would turn his body away from her. This may have influenced Rebecca's practice as limited responsiveness could have further reinforced the need for her to lead and direct the session and this related to her typical interaction style, an example of a practitioner reverting to old behaviours (Marris, 1975). Rebecca’s difficulty responding to Jacob’s behaviour and finding a shared meaning that could be experienced by the dyad could be seen as an example of Milton’s (2012) double empathy problem. She finds it difficult to link and support co-presence and communicative presence as described in inter-subjectivity theory by Trevarthen et al. (1998) and Dant (2015).

5.3.2 Jacob, CB and practitioner fear

Another consideration in this case was managing Jacob's CB and it was mentioned on many occasions in the VSR from Rebecca that she felt she needed to behave in this way to keep Jacob calm. This was an interesting perception as Jacob did not always remain calm and often the sessions contained CB. Rebecca’s perception may relate to a sense of fear that she felt, and she managed this fear by interacting in a familiar and predictable way in order to manage Jacob's CB.

This contrasts with the view of II presented in the literature (Hewett et al., 2012) that by utilising an II approach CB's are likely to be reduced. The complexity of Jacob means that his engagement may be extremely variable, and when he is settled there may be brief moments of attaining one of the fundamentals of communication (Nind and Hewett, 1994). Whereas when he presents with increased levels of arousal then he may not have the ability to access II or any other teaching approach. However, in the case of Jacob his CB could have presented as a barrier to implementing II as he did not develop an emotional attachment with his interactive partner. This may not have been a limitation of Jacob's ability but rather a limitation in the practitioner's ability to implement II.

5.3.3 Measuring II in the case of the *Stayer*

The case of the *Stayer* makes an interesting case for the importance of the practitioner skill level on the progression of the pupil. A measure of outcomes for II discussed in the literature by Firth (2008) is the Dual Aspect Process Model of II, which includes both social development and skill development. The case of the *Stayer* demonstrates no measureable progression on either aspect of progress. Jacob was not observed to show social outcomes, such as desiring interaction with Rebecca, and he was not seen to develop any new skills. From the II literature and definitions used it is argued that Jacob did not respond to the II approach as he made no measurable progress despite using various different measures to conclude this. However, as previously noted, II was not implemented by Rebecca as she found it difficult to establish a communicative environment where shared understanding was achieved as described in inter-subjective theory (Trevarthen et al., 1998; Dant, 2015).

5.3.4 Jacobs response to a skilled and experienced practitioner

As Rebecca struggled to implement the II approach, further support was provided in the *Stayer* unit. An expert II practitioner was brought in to ascertain how Jacob would respond to II. Interestingly, he was seeking out interaction during burst/pause sequences and during the session Jacob displayed no CB. This supports the claim that the II approach may have a positive impact in reducing challenging and ritualistic behaviours (Nind, 1996; Caldwell, 2006).

This session demonstrated that with a skilled practitioner Jacob had the ability to respond to II. The interaction style of the practitioner positively impacted on Jacob’s communicative ability, this finding supports the study undertaken by Kossyvaki, Jones and Guldberg

(2012), and created an environment of shared understanding as suggested in inter-subjectivity theory (Trevarthen et al., 1998; Dant, 2015).

Despite a variety of targeted interventions aimed at supporting the implementation process for Rebecca, she was not seen to utilise II techniques. There are a variety of barriers when implementing a new approach in this research context; in addition to the complexity of pupils with autism, SLD and CB, the staff member's skills and experience are felt to contribute to the implementation process. In the case of the *Stayer* it would have been useful to have had a model where the steps of II were broken down into themes and potentially this could have yielded more progression for Rebecca to have focussed on one theme at a time.

5.3.5 Kerry's progression in the *Changer* and the *Reflector* cases

By considering the two dyads involving Kerry it is clearly demonstrated that the practitioner's starting point and baseline skills play a key role in enabling Kerry to reach higher level skills; this need for a specialist teacher is described in the literature (Batten et al., 2006). In the *Reflector* unit, Jenna was an experienced teacher with previous knowledge and experience of II.

The baseline videos demonstrated her knowledge and skills in II. Kerry responded well to this, however, the interactive sequences were short and fleeting. Following the training Jenna's skills developed throughout the post-training videos and Kerry responded well to Jenna's improved skills. Jenna was building on her existing skillset throughout the study by reflecting and refining as she progressed through the project. As a consequence, the interactive sequences with Kerry improved both in terms of reciprocity and duration.

In contrast to this, Laura the *Changer* had no previous experience in the special education field and this was the first occasion she had encountered II. Throughout the project, Laura significantly reduced her verbal language and this resulted in more opportunities for Kerry to interact with Laura. This finding supports Webster and Blatchford's (2013; 2014) view that the high TA presence could be at the cost of teacher interventions. Due to Laura achieving changes in the communication theme if there was a model of II progression she could have focussed training and practice on the next step and potentially this would have consistently improved her practice.

5.3.6 II and the reduction of CB

In the review of the II literature, the II approach was seen to have a positive impact in reducing challenging and ritualistic behaviours (Nind 1996; Caldwell 2006). It is described that CB can be more appropriately replaced by socially acceptable behaviour when a pupil is supported to build positive relationships with people. This was evident in the cases involving Kerry as throughout the project during the videoed interactive sessions that took place on a weekly basis, none of the sessions contained any CB. This demonstrated a significant improvement compared to her typical presentation as discussed in chapter four. It may be the case that the theoretical underpinnings of inter-subjective theory (Trevarthen et al., 1998; Dant, 2015) made a significant difference to the pupil.

5.3.7 Kerry's progression

The most positive outcomes, when related to the fundamentals of communication were seen in Kerry. During the project, the *Reflector* case demonstrated Kerry increasing her ability to interact with a partner over time and showed clear progression. Her communicative skills increased in response to the II techniques utilised by the practitioners and there were examples of social communication development. By careful analysis of the case study data on many levels, Kerry was observed to make progress and her skills moved through some of the developmental progression stages as described in *'A framework for recognizing attainment in II'* (Firth and Barber, 2011).

Throughout this project Kerry has increased her awareness. Initially interaction was fleeting and disjointed but by the end of the project she was more aware in the sessions with interactive sequences lasting 3-4 minutes. Kerry's involvement in the process evolved from a passive observer to an active participant (Hewett et al., 2012) and in particular sequences she was observed to reach out to Jenna's face and turn it towards her. The responses and behaviours displayed by Kerry are likely to have had a positive effect on Jenna as Kerry was responding so favourably. When Jenna utilised II techniques such as imitation and mirroring, Kerry would typically respond to this approach and engage in a reciprocal communication sequence. By Jenna reflecting on her own impact on Kerry and subsequently addressing barriers to their shared understanding and enjoyment, she may have addressed Milton’s (2012) double empathy problem.

In the contrasting cases of the *Reflector* and the *Changer* there are different outcomes produced by the pupil Kerry who features in both cases. In the unit of *the Reflector*, the interaction began at the start of the project with the use of objects through which the pair interacted. Jenna utilised the objects to build very brief interactive sequences. As seen in chapter four, they both engaged in the activity and gradually developed longer sequences of interaction through the course of the project that included more emphasis on interacting with each other. There is a qualitative difference in these sequences with Jenna by the end of the project to not include objects, other than the parachute to frame the session and the interaction takes place between Kerry and Jenna for 3-4 minutes at a time.

This is contrasted with the unit of *the Changer* which initially contained lots of activities organised around the room for Kerry to take part in. When Kerry was seen to have had enough she would either throw the activity or move to a different area. Laura was initially very reliant on verbal language and the reason for this could be that she found this difficult due to it being different from how you would typically communicate as seen in the study undertaken by Kossyvaki et al. (2012). Once the use of language had reduced the pace slowed and less activities were used overall with the result of more interactive sequences. Kerry achieved a higher level of interaction and felt to be more in control of the interaction with Jenna also the time periods of interaction were far greater. Many more techniques were utilised by Jenna in terms of pupil led, burst-pause sequences and imitation these were observed to have developed over the course of the project. A model which sequentially demonstrated each II theme could have assisted the *Reflector* in terms of having a model to follow at each step.

5.4 Unique insight and skilled staff

This project provides a unique insight into II. Currently the literature has only a few studies of implementation of this approach and none of the current studies involve this specific client group in a specialist school setting. The evidence base in II often cites single case studies with rich description of positive pupil outcomes (Kellett, 2000), but this produces limited conclusions or ways forward for utilising this approach. This project includes an in-depth analysis of three typical and distinct dyads that recognise the differing responses and interaction styles adopted by staff members impact on the outcomes for the pupils as also discussed in Kossyvaki's study on adult interaction styles (2018). This small-scaled project indicates a need for skilled practitioners to implement II underpinned by the theoretical framework of TMCD (Sameroff, 1975) and intersubjective theories (Trevarthern et al., 1998; Dant, 2015).

5.5 The proposed model "Ladder of Intensive Interaction"

The complexity of the pupil group in this specialist setting indicate that they are challenging to engage with in a two-way interaction sequence. I use the above analysis to propose a ladder of II techniques which the staff member could focus their efforts upon to promote the social communication and a feeling of being socially included and emotionally connected (Hewett et al., 2012). The proposed Ladder of Intensive Interaction is underpinned by the TMCD (Sameroff, 1975), intersubjective theories and AISI (Kossyvaki et al., 2014). In particular, the thirteen principles of the AISI protocol (Kossyvaki et al., 2014) underpins the five steps of the proposed Ladder of Intensive Interaction. The outcome of this project indicates the need for skilled practitioners that are required to deliver the II approach in this specialist setting due to the complexity of pupil group.

Although this process is two-way the aim would be to optimise the experience for the pupil. I propose a five-point "Ladder of Intensive Interaction" to provide a progressive guide to the practitioner as the evidence from this project, linked with the literature, suggests that a higher level of skill from the practitioner achieves enhanced progression in the pupil (Figure 10). Milton's (2012) Double Empathy problem underpins the whole ladder, particularly the reflection stage where the practitioner would reflect on their own impact on the interactive process to increase shared enjoyment and understanding. This removes as many barriers as possible to accessing the approach as the practitioner is fully in tune with the pupil adapting interactions on a minute to minute basis.

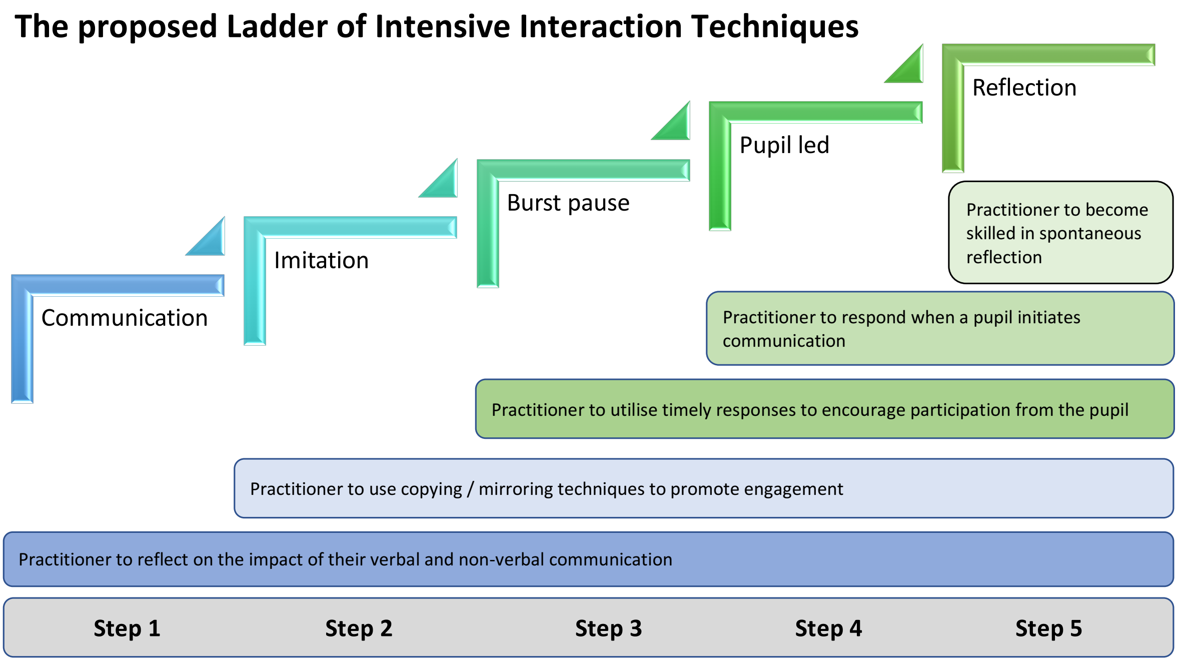

Figure 10: The proposed ladder of Intensive Interaction

5.5.1 Promoting communication

The fundamental stage of the ladder of II would focus upon communication and promoting communicative behaviours between the practitioner and the pupil. Within this step it would be important to consider both verbal and non-verbal communication and its function within the interactive sequences. The pupils included in this project are functioning at the non-verbal communication level and it would be important for the practitioner to consider interactions that responded to the pupil's current skill set and at a progression level on from this to provide opportunities that were appropriate to the pupil’s developmental level.

The importance of using non-verbal communication would need to be stressed with practitioners to recognise this level of communication and its value, as this would be a change to many practitioners’ reliance upon utilising verbal communication. By encouraging practitioners to be aware of their non-verbal communication this would provide an opportunity to consider what their current style is and to increase their focus on training and practice skills. These skills such as proximity, eye contact, facial expression and use of touch could be taught and considered to enhance this step of the ladder. The focus for staff would be to ensure that the communication is exactly at the right pace for the pupil to access. There are many components to the use of verbal language and this could also be focussed upon in a training session where key elements such as tone, pace or the use of instructional language could be considered. This step of the ladder is fundamental to the implementation of II because without appropriate communication behaviours from the practitioners all of the II techniques could be more difficult to implement.

5.5.1 a) Communication in practice

In the unit of *the Reflector*, Jenna can be observed to be considering many different variables in relation to communication. Often this was done non-verbally waiting for eye contact or a sudden sound to gain Kerry's attention. Importantly, this very skilled reciprocal communication was pupil-led, as Jenna would wait for cues from Kerry to determine her readiness. Jenna utilised eye gaze, open mouth gestures, sounds and vocalisations to communicate as well as laughing to interact with Kerry. Many of these responses were used by Kerry to communicate back to Jenna. In contrast, as seen in chapter four, there was a heavy reliance on spoken language used throughout the *Stayer* unit which led to disengagement from Jacob.

The *Changer* unit shows the direct relationship between how the practitioner responds to the pupil (Chapter 4) and how this can positively affect the outcome of the session and the promotion of II. Through practitioners gaining an understanding of this fundamental skill the implementation of the II approach can directly affect outcomes for pupils.

5.5.2 Imitation

The next stage that I present in the ladder of II is imitation; this skill was felt to support interactive sequences. Imitation is a recognised technique within the II field; the literature contains differing definitions around the concept of imitation. II has been described to involve 'responding' rather than simply copying and mirroring the pupil:

> "… some practitioners of II resist the term 'imitation' because it carries the connotation of only mirroring the partner, rather than responding to the partner in his or her own language" (Neil, Jones and Zeedyk, 2012, pp.54).

This definition of imitation as an II technique considers that interactive sequences should be more reciprocal and the way that practitioners respond can develop and build on the actions from the pupil. Caldwell (2006) similarly comments that using an individual's own language 'provides a gateway to communication', and it is not simply mimicry. These definitions describe an advanced process of engagement and imply that imitation is a complex technique that requires a skilled practitioner. A contrasting perspective from Hewett et al. (2012) likens imitation to 'copying' and 'joining in' and describes imitation as 'easy to do', this view is often portrayed in II training.

For the purpose of the ladder of II, imitation is being used as a term to cover mirroring, copying and responding and these variations of imitation can produce a different focus during a session depending upon the interaction. From the data within the units a clear understanding of each of these different ways to facilitate imitation has been shown to assist the pupils to achieve more sophisticated interaction.

5.5.2. a) Imitation in practice

When analysing the data from the *Reflector*, Jenna utilised imitation by non-verbal means including eye gaze, facial expression and body movements to respond to Kerry. The way Jenna utilised imitation included reciprocal mirroring of Kerry that primarily included copying with the described nonverbal gestures (Neil, Jones & Zeedyk, 2008). As II sequences were a new skill for Kerry, Jenna identifies in the VSR that she needed to directly imitate Kerry in order to gain her attention. The way that Jenna describes imitation appears to be at an advanced level. This builds on the literature as Jenna discusses the development of using imitation as an II technique; she considers that the pupil Kerry required mirroring during the project because she had limited skills in this area. Jenna considered that Kerry benefited from direct imitation, by mirroring and copying at this time but she was also aware of a more responsive approach by responding with slightly altered responses, when this was suitable for Kerry. This relates to the concept of imitation as more responsive, and includes altering the behaviour and cues of the pupil to expand on their interactive repertoire.

In summary, the use of imitation as a technique has highlighted how a pupil's skillset can be enhanced, particularly when used by a skilled practitioner, whilst utilising other techniques simultaneously.

5.5.3 Burst-pause

The next step within the ladder of II is a technique, this is the use of burst-pause sequences which relates to the pace and flow within an II sequence. Hewett et al. (2012) discuss the variation of what burst-pause sequences may involve in terms of a pupil's progression and development for the technique, stating that;

> "…at this early stage, you might quickly create a sequence of what we can call 'social cause and effect' explorations" (Hewett et al., 2012, pp. 49).

By this definition of burst-pause sequences, interaction involves some turn taking that is structured around exploring an object or activity. Hewett et.al. (2012) also state that:

> "…you are trying to establish a sense of flow, a sense of communication flow that is shared with the other person" (Hewett et. al., 2012, pp.66).

This recognises that burst-pause sequences can develop into skilful reciprocal interactions and when used to best effect intuition and pausing are key features to this interactive sequence. In this sense burst-pause sequences are reciprocal and Nind and Hewett (1994) describe this technique and the use of pausing as being one of the more difficult and complex techniques for the II practitioner to implement, this is because they need to be responding spontaneously to the situation and must have a thorough, intuitive understanding of the approach. The skills of burst-pause sequences are central within the II approach, in order to allow pupils opportunities to respond to interactive cues from the practitioner then the interactive partner needs to utilise pauses. The need to pause and carefully time interactive responses could relate to the processing ability in some of the pupils. Due to their SLD, they can require additional time to process language and interaction.

5.5.3 a) Burst-pause sequences in practice

In the unit of the *Reflector*, Jenna was often seen to use pausing and this supported a slow-paced session. She utilised an intuitive response to burst-pause sequences and the video data showed her engaging Kerry's interest and building a sense of anticipation of interactive responses. Two of the units involve the pupil Kerry and it is interesting to compare the burst-pause sequences used by the two different practitioners as they lead to differing outcomes for Kerry as seen previously in Chapter 4.

5.5.4 Pupil-led interaction

The next level in the proposed ladder of II is pupil-led interaction. The reason for including this in the model is the need for pupils to develop this skill to initiate interaction and not only at the opportunities given within burst-pause sequences. The skill development for this level is to enable pupils at any point to attract attention, initiate and engage in interactive sequences. This would be an essential skill to develop in the pupil to ensure they build an effective communication skill base and repertoire. By utilising skilled practitioners to develop burst-pause sequences in which pupils can contribute and be supported to learn the skills of responding then leading interaction would be a progression on from this. By focussing the practitioner on the development of this skill the aim would be for the practitioner to create opportunities and promote the skill development in the pupil to attract attention and initiate communication when required. Practitioners also need to be skilled observers and interpreters of behaviour to note when pupils are attempting to lead, as the signs can be minimal.

5.5.4 a) Pupil-led interaction in practice

In the unit of the *Reflector*, Kerry demonstrated a clear progression in skills, in relation to the session being pupil-led. This began through the use of objects and developed into sequences where on some occasions no objects were used within a five-minute session, instead communication took place directly with Jenna. Kerry showed a significant interest in Jenna's face and would remain engaged waiting for her facial expression to change slightly.

In contrast, in the unit of the *Changer,* Kerry would join Laura when she was motivated by an activity and so she would wonder up to the activity and tap or bang the object to engage. When these sequences were observed it was clear that Kerry was engaging with the object rather than the person, on these occasions, she would not maintain any interest in the staff member. This example shows how the lack of opportunity, due to practitioner limitations can restrict the level achieved by the pupil.

5.5.5 Reflection

The final stage in the proposed ladder of II is that of reflection. The ladder is designed to enable practitioners to move through the different levels and in order to achieve this they require reflective skills to assess where they are currently at and how to achieve the next stage. This reflection is extrinsically determined and aimed to assist the process and designed to produce a prompted reflective response. The highest stage in the ladder is to encourage an intuitive and naturally reflective response that develops practitioner skills. This would produce a more spontaneous response to develop a practitioner's skill to utilise the techniques with a range of different pupils. This has been included as the highest level to encourage practitioners to adopt a reflective approach and review the II process and their contribution within it. The outcome of this would be to create 'expert' practitioners who could generalise their skills to a whole range of pupils with an in-depth understanding of the approach.

5.5.5 a) Reflection in practice

To demonstrate the reflective levels shown in the units and these differing levels and the differences they made to Kerry I will discuss the two practitioners Laura and Jenna. In the *Changer* unit, Laura demonstrated reflection by watching back the video sequences and commenting upon her use of language, this was using an extrinsic prompt. To enable the interaction Laura was requiring objects to structure these sessions and when Kerry finished engaging with the objects she discarded them at this point the interaction would also be terminated. Kerry would then be re-directed to another object by Laura.

Jenna demonstrated a higher level of skill and it was felt that these sessions could take place at anytime, anywhere and were at a higher level in terms of techniques utilised by Jenna. These interactions appeared to be much more spontaneous and this produced a higher level of interactive skill from Kerry which was longer in duration and contained more of an interactive repertoire of sounds, laughing, eye contact and engagement. There was a clear correlation in the units of Kerry between the skills of the practitioner and the levels achieved. Although Laura showed some reflective practice it was at a changer level where it was about the objects and activity whereas the *Reflector,* Jenna, showed higher levels of critical reflection.

As demonstrated in the proposed 'Ladder of II', this model provides a structure for staff personal development and a framework that encourages reflection throughout and has a goal of promoting a higher level of reflective ability to enhance the skills of the practitioner. This higher level of ability has been shown through the use of case study data to enhance the outcomes for pupils thus promoting their social communication skills to achieve the highest possible skill level.

5.6 Training and Continuous Professional Development

The literature points to the fact that the context of the research setting is a critical factor in relation to changing educational practices (Kellet, 2003; Fullan, 2016) and the unique setting in which this research has taken place offered many opportunities to generate motivation from the participants. This was generally achieved by celebrating pupil successes and in doing so, building awareness of pupils' needs and interests. The staff in the school have often spoken with pride about pupils' successes which indicated to me that they were motivated to make a difference. The school is actively working against the staff feeling physically isolated by promoting a culture of sharing, observing and discussion to support staff members in continuous professional development that in turn will benefit the pupils.

To enable the staff to understand how to achieve the best for the pupils, regular training sessions for the school staff focus on developing their professional capabilities and for the purpose of this project, one of these training days focused on II. In accordance with the "Handbook of Intensive Interaction" (Hewett et al., 2012) anybody should be able to deliver II as long as they have been taught the II principles and the training was delivered from the II institute. However, research shows that no amount of knowledge will ever make it totally clear what action should be taken in the moment (Hattie, 2009; Fullan, 2016). The practical consequence of this is that outcomes vary as participants have vastly different starting points so the level of change will vary between the participants. This supports the views of Hattie and Fullan that you cannot expect all practitioners to change (Hattie, 2009; Fullan, 2016). Findings from this study suggest that the ability to change varies considerably from one practitioner to another. It is therefore important to understand how practitioners can be supported through the change process.

5.6.1 The II training and use of questionnaires

The II training was organised for all staff within the school and as the base line knowledge demonstrated through the initial questionnaires was quite limited, it was aimed for practitioners new to II. All teaching staff within the school, including the TAs, took part in the training that provided an overview of II principles and demonstrated these through video clips. However, the staff commented that the pupils on the video clips were significantly different to the pupils they work with and this may have resulted in some practitioners dismissing the approach even before the intervention phase had started.

The questionnaire data demonstrated that in the baseline stage responses of staff only 14% could identify factors that were important when interacting with pupils that would support an II approach. Following the training this figure increased to 57% who could describe II and outline two themes that were directly linked to the approach. The impact of the training is very evident in response to the question ‘What does II mean to you?’ and clearly the majority of staff improved their responses and were able to recall some of the information from the training. This figure reduced by the third questionnaire where the responses were less detailed and shorter, this was the general trend overall, however two of the respondents went on to elaborate further information and this suggested that they had attempted the implementation and were reflecting on this experience.

This kind of professional development and the impact would be supported by the literature on teacher professional development (Clarke and Hollingsworth, 2002) with the causal chain model, whereby the knowledge gained from the training would be short lived and exist at a surface level as described by Hattie (2009). However, two of the responses suggest implementation of II and this would support the empowerment model where teachers are identifying and acting on their own needs (Mushayikwa and Luben, 2009).

Interestingly, if the *Stayer, Reflector and Changer* types are utilised to make sense of the questionnaires two respondents consistently did not demonstrate any change (i.e. are *Stayers*) but there appear to be many *Changers* (72%). Looking at their responses in questionnaire two/three, however many appear to have reverted back to the original questionnaire responses by questionnaire three, as the change was not maintained. There were also the two that changed in questionnaire two and further developed these by questionnaire three. This might suggest staff are *reflectors* though more detailed research would need to be undertaken to clarify this with the wider group.

The questionnaire, from the findings of this project, can demonstrate the cognitive surface level learning that has been shown to have little impact on long-term practice as argued by Hattie (2009) and Guskey (2006). Whereas the data sets collected in units one, two and three have given a very in-depth perspective of the process of change and what was happening in each case, it has also provided useful material for observations, reflection and understanding.

5.6.2 The research methods as training tools

A multi-method approach was adopted in this project, not only to enable triangulation of data, but also to engage the practitioners in developing and adapting new knowledge, skills and understanding which is essential to achieve lasting outcomes (Fullan, 2016). A key finding from the project is that the research tools became efficient training tools for some practitioners as the VSR sessions offered opportunities to discuss and share observations with colleagues to enable improved practice. This is an example of an interconnected model of teacher professional growth as described by Clarke and Hollingsworth (2002). It is interesting for me as head teacher to consider the general professional learning benefits of this approach.

The VSR sessions led to specific and varying responses from the individuals involved and they provided good insight into the practitioner’s subjective reality. It was interesting to note how different some of their perceptions were compared to the observations made from watching the videos. VSR is an evidence-based strategy to support practitioner's reflection of their practice and encourage change (Lyle, 2003; McLennan et al., 2005) and although the practitioners in this study all reflected on their practice, the level of development observed in the practitioners varied significantly.

A direct impact from the training on II was to implement a warm and cool feedback session as the next intervention point, this kind of reflective practice opportunity is described in the literature by Bolton (2010) and Ghaye (2011). The purpose was to provide a multidisciplinary forum in which to discuss short video clips as a group. This was particularly significant within the implementation strategy as each pupil was focussed upon and the staff members who had taken part in II were each featured in pre-selected video sequences that were viewed by the whole group. Those present provided feedback after watching the videos and these fell into two categories; positive (warm) and suggestions for improvement (cool) feedback. This had the impact of identifying particular new focus areas to continue to refine and improve practice.

One example from the unit of the *Reflector* was that Jenna, on watching the video, commented upon her own body positioning as enhancing the communication with Kerry. She had taken from the training and the videos that positioning herself lower supported II sequences, this was then discussed as group and developed further awareness about this specific technique as a result of the warm and cool feedback session.

On reflection, this technique was responded to most positively by the *Changer* as during this session it was noticeable how reflective and honest Laura was in relation to her practice. She discussed in the group some of the things she had observed and noted areas for improvement and was able to utilise the warm and cool feedback session as an opportunity to develop her practice and suggest refinements and changes. In contrast, the *Stayer* utilised this session to justify her practice rather than reflect, this was in response to both the warm and cool feedback she was given. This concept is referred to in the literature as false clarity (Fullan, 2006).

When evaluating the implementation process within this project, the findings suggest that the complex needs of the pupils require practitioners to have more than a basic level of training before implementing II in such a complex, specialist setting. A key finding from this project was that better progression happened with skilled practitioners.

5.7 Stages of Professional Development

Barnard et al. (2002) argue that it is important that teachers develop an autism awareness and skills in teaching pupils with autism and SLD. A number of assumptions and predictions made by teachers can not necessarily be made when teaching a pupil with autism (Jordan and Powell, 1995). The pupil with autism therefore need special consideration (Jordan and Powell, 1995; Hodapp et al., 1998; Parsons et al., 2011; APPGA, 2017) but more than 50% of teachers report that they do not have the necessary skills and training to meet these needs (Hodkinson, 2009; Robertson, Chamberlain and Kasari, 2003; APPGA, 2017). As this project has highlighted how complex it is to make a change in practice in an education setting I will propose a model called *"Stages of Professional Development"* (Figure 11) to bridge the gap between the teacher's perceived lack of knowledge and skills and a future state where the practitioners feel confident to meet the needs of a very complex group of pupils.

This model is underpinned by the interconnected model of teacher professional growth (Clarke and Hollingsworth, 2002) and the empowerment model of teacher development (Mushayikwa and Luben, 2009) in which the practitioner is supported to identify and act on their own needs to develop as reflective practitioners. The model also aims to develop the practitioner to enable them to utilise reflection as a tool for their professional development as described in the seminal work by Schon (1983; 1987; 1992). I am using examples from the three dyad pairs in which the complexities of the pupils and their ability to respond to the II approach seem to be linked with the staff members a) ability to be trained and b) ability to implement a new intervention.

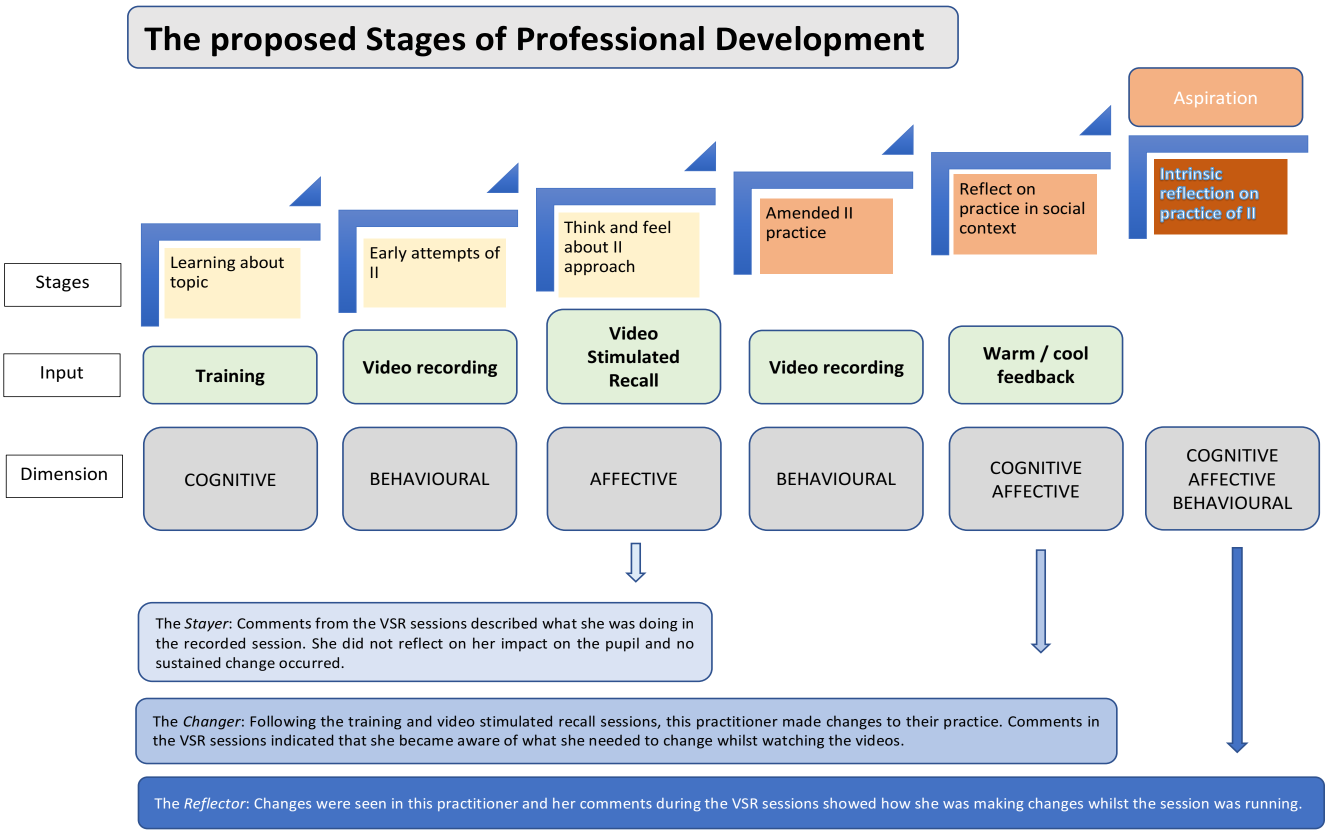

Figure 11: The proposed Stages of Professional Development

5.7.1 Knowledge, experience and training

The intervention phase was planned in collaboration with the practitioners as the pre-implementation data showed such a wide gap in both knowledge and experience. For example, Jenna (the *Reflector*), demonstrated both knowledge and previous experience in her initial questionnaire and the base line videos and in the VSR session relating to these, she was pointing out II techniques used during the session. Jenna was observed to be following II principles like imitation and burst pause sequences in line with her VSR account.

In contrast to this, Rebecca (the *Stayer*), had no prior theoretical knowledge of the approach and this was recorded in her initial questionnaire. Rebecca could have felt reluctant to change her practice as she believed that she kept Jacob calm and perhaps this new approach would be a threat to her interest as suggested by Verhulst and Lambrechts (2015). It may also be that she understood the cognitive dimension of change as described by Erwin and Garman (2010) but was not able to implement the behavioural and affective aspect.

At the end of the first part of the intervention phase it became increasingly clear that Rebecca, the *Stayer,* did not implement II principles in her approach. The methods that had been used to support the change process had not been effective in her case so I decided to support her learning in a more direct way. The practitioner in the *Stayer* unit was offered a session of direct modelling and advice from an expert II practitioner.

Following this intervention during the next eight weeks of videos Rebecca was initially observed to reduce the number of songs. Rebecca was not observed to pause in the session and she was observed to be quite physical and dominant with Jacob removing any opportunities he had to contribute to the interactive sequence. By the end of the implementation phase Rebecca had reverted back to her previous teaching style.

The first stage of the proposed model focused on the practitioners learning about the approach. The traditional training event, as described by Clarke and Hollingsworth (2002) as the causal chain method, addresses the cognitive dimension of change (Erwin and Garman, 2010) whereby an experienced practitioner trains the participants. Mushayikwa and Luben (2009) describe this as a deficit model of development, however, this project used this stage as the base line for further developments towards an empowerment model of development.

5.7.2 Knowledge and impact on practice

Following the training, Rebecca, demonstrated a theoretical understanding of II in her post-training questionnaire but although she referred to the II principles in the VSR session, this was not observed in her practice. The significant difference that was observed following the training was a reduction in the number of songs she would sing, from ten to six, but when the six songs ended she would start to hum the other nursery rhymes. Rebecca stated that "generally when I do interaction with Jacob, he usually initiates this" (VSR 3) but in all the videos in this period, Rebecca initiated and led the interactions. This is interesting as it indicates that Rebecca understands the II concept of pupil led interaction but she is "seeing" something that is not there in practice which is in line with Fisher and Wood's (2012) theory that practitioners run the risk of modifying new knowledge and "see" changes that are not there.

Fullan (2016) called this "false clarity" describing how practitioners may think they have changed but they have in fact just captured superficial aspects of the learning, which Hattie (2009) called "surface learning". Clarke and Hollingsworth (2002) warned that the traditional training event may only lead to surface level change of improved awareness and knowledge. False clarity was also seen in Kossyvaki et al. (2012) study where the practitioners felt that two particular children had increased their spontaneous communication whilst the video recording did not demonstrate this view. The second and third stages on the proposed Stages of Professional Development model aims to support the practitioner to make behavioural and affective changes through using video recordings to enable the practitioner to identify and act on own needs as described in the empowerment model of development (Mushyikwa and Luben, 2009).

In contrast to both Rebecca and Jenna, Laura the *Changer* remained focused on her initial discovery of reducing verbal language. On the third stage of the model, the VSR session supported her to reduce the verbal language in the interactive sequences with Kerry but she was not able to link this with the progress she had made in terms of II principles. It was interesting that Laura, by reducing her verbal language, utilised isolated II principles like imitation, burst-pause sequences and pupil led aspects of II without acknowledging that this is what she was doing during the VSR session. She did not seem to link the theoretical knowledge she had gained of II with her practice. Although there were changes noted in relation to eye contact, burst pause and imitation, all her interactive sequences with Kerry were reliant on objects. It was noted that Kerry's interest in the objects and activities Laura facilitated lasted for increased time periods. Laura demonstrated a clear and sustained development in her practice, however, she did not set out to discover how she could make a connection with Kerry as described by Firth, Berry and Irwine (2010).

5.7.3 Becoming a reflective practitioner

Warm and cool feedback was utilised to enable collaborative working and the participants would interact with each other providing technical help and peer support and pressure (Garet et al., 2001). Fullan (2016) describes how educational change is technically simple yet socially complex due to the multiple, subjective realities experienced by the participants and Drake and Heath (2011) describe how power and knowledge are interactively and dynamically connected and distributed through complex social networks. The idea behind the warm and cool feedback session was to enable the practitioners to co-construct new knowledge in a secure and supportive social environment to avoid the practitioners feeling threatened by the change as described by Verhulst and Lambrechts (2015).

The warm and cool feedback session did not prove particularly useful for the *Reflector* Jenna, as she would reflect on her practice moment by moment and adjust her pace and activity based on the pupil she was working with. This demonstrated that deeper learning had taken place (Hattie, 2009; Guskey, 2006), in which Jenna's thinking and understanding of the interaction sequence was focused on understanding how she could make a connection with Kerry. Firth, Berry and Irwine (2010) are clear that II practitioners' focus should be to establish this connection. The warm and cool feedback highlighted a need for some changes in Rebecca's practice but subsequent videos evidenced limited observable change.

5.8 The proposed model *Stages of Professional Development*

When reviewing the implementation strategy that has been employed it has been necessary to utilise a variety of data tools to build a holistic picture of the impact of this project. In order to evaluate the usefulness of each data method the units show that individuals respond differently to each training opportunity they have received. The implementation strategy was designed to be part of a dynamic and evolving process, which has been informed by the needs of individuals throughout the project, including any additional one-to-one coaching opportunities. In this section I will suggest that practitioners react differently to change stimuli and as a result of this the practitioners reach different levels of professional development as seen in Figure 11. The practitioners participating in this project can be characterised in three ways as the *Stayer*, the *Changer* and the *Reflector*. They had very different starting points as discussed in the previous section.

The proposed Stages of Professional Development model (Figure 11) illustrates that the base line for any intervention is important.

Yet despite having similar starting points, two practitioners (the *Stayer* and the *Changer*) achieved very different stages of personal development.

The *Reflector*, Jenna, was a special education teacher with a number of years' experience. She had already had experience and training in II. In the initial questionnaire Jenna outlined previous training experiences in II and had incorporated this into her teaching practice. She has a broad range of teaching experiences within the special education field teaching pupils with autism, SLD, and CB. The depth of knowledge in II and previous opportunities to incorporate the approach into everyday teaching situations would have clearly been advantageous in this unit. Jenna was an experienced practitioner at the start of the implementation strategy; this strong background was evident throughout all of the data sources, including the baseline videos.

The teacher Jenna quickly adopted her teaching style and had implemented II with Kerry already in the base line videos. Referring to the figure representing the stages of development (Figure 11), she very quickly moved through the stages as she was already able to reflect on her own practice. She was the only practitioner who reached a level where her reflections considered ways of building a connection with the pupils she was working with. In contrast to this, the *Stayer*, had no prior knowledge of II, and despite demonstrating a theoretical understanding of II in her questionnaire, she did not manage to transfer this into practice. In addition, on reflection on her own practice, she identified II principles, however, this was not evident in the video recordings. Rebecca did not seem confident during the professional development process and quickly returned to her base line practice.

The *Changer,* had no prior knowledge of II but she demonstrated an ability to reflect on her own practice and make changes as a result. The reason why she is not classed as a *Reflector* is that she was not able to link her theoretical knowledge of II with her practice. Her practice changed as a result of the identification of a technical problem that she identified through reflection. She never reached the stage where her reflection was centred around a focus on finding ways of connecting with the pupil. Laura is classed as a *Changer* and not a *Stayer* because her practice did shift during the process and she did not revert to her old base line on completion of the project.

5.9 Implications for Practice

To summarise the discussions in this chapter I will highlight the main implications for practice. The findings suggest that the ability to change varies significantly from one practitioner to another. It is therefore important to understand how the professional development process works and I have proposed a model for professional development based on the earlier analysis and the associated literature. This model is intended to demonstrate how the cognitive and affective aspect of change impact on the practitioners professional learning and behaviour. The behaviour in turn impacts thoughts and feelings about a specific change. The impact of this model is not just limited to the implementation of II in a specialist school setting, it could be utilised in any educational change process, as the model is not II specific. The levels describe the practitioner’s cognitive, affective and behavioural status (Erwin and Garman, 2010) in addition to tools that can be utilised at each level to support the practitioner’s development. The findings from this study suggest that if the scaffolding at each level is not effective, the practitioner could revert back to their previous style as described by Marris (1975).

5.9.1 Training

In this project, the process of the traditional in-service training has been demonstrated to not be the most effective way of providing training. The findings concur with Clarke and Hollingsworth (2002) when they suggest that the traditional training event may only lead to a surface level change of improved awareness and knowledge. Typically, the effectiveness of a one-day training session would be measured by a questionnaire but in this project, the theoretical knowledge measured in the questionnaire did not consistently transpire to make a difference in practice. Specifically, the impact of traditional training needs to be considered in relation to transferability to practice. Another interesting aspect from this project was that the data collection tools utilised also proved to be effective as training tools but again with limitations in relation to one practitioner.

5.9.2 Supporting practitioner change through a proposed "Ladder of Intensive Interaction Techniques"

The findings from this project, with reference to the literature, suggest that practitioners responded very differently to the training that was provided to support them in implementing II. As a result of this, I propose to focus the practitioner on one technique at the time and once this has been mastered, the next technique is introduced following a structure presented as the "Ladder of Intensive Interaction Techniques" (Figure 10). This would impact on the way the training is delivered, as the progression of the approach would be based on the successful implementation of the previous technique. This would support practitioner's development in line with their pre-existing knowledge, skills, values and beliefs in addition to their ability to use their intuition and make on the spot decisions.

5.9.3 Dyad Pairs

The data from the three units in this project suggest a significant difference in how the dyad pairs respond to the development process. This may be because of the practitioner's ability to implement the approach or it may be because the pupil is not responsive to change due to the difficulties they experience because of their autism, SLD and CB. Other factors to consider are the practitioners' understanding of the change, fear and resilience factors and the risk of the practitioner "seeing" what they have learned in training which has been termed "false clarity" (Fullan, 2016).

The impact of this is that the leader of the change process would need to play an active role in leading the implementation by establishing a culture of openness and trust in addition to clear direction based on dynamic assessments. Training and VSR will be instrumental in this process as this project highlighted that the perceptions held about practitioners at the start of a project may not be accurate as seen in the *Stayer* unit where the practitioner teaching Jacob was perceived to be a good practitioner. During this project, her limitations in terms of her practice became clear, both in terms of her understanding of II and actual interaction with the pupil. In the warm and cool feedback session and the VSR sessions, Rebecca remained fixated on explaining why she was doing what she was doing and as a consequence, she remained stagnant and was regarded as a *Stayer* in terms of her practice.

5.9.4 Skilled practitioners

In this study, the outcome for the practitioner was to achieve a higher level of interaction, in terms of quality and duration, with the pupil to enhance their learning. This was clearly demonstrated in the units involving Kerry where during the project she achieved differing levels of interaction with the two practitioners and this showed how the pupils' interactive ability may be limited or enhanced by the practitioner. In this study, the limitation of ability to implement II was seen in the cases involving the two TAs and this may indicate that a review is needed into the role of the TA and the support and training they receive to become effective in their role. These findings in relation to TAs supporting some of the complex SEN pupils is in line with the findings of Webster and Blatchford (2013; 2014).

The project has shown how II has proved to be a suitable intervention in the research context and for some pupils how they have responded favourably to the approach when the optimal conditions have been met. However, it has also been demonstrated that the success of the approach is closely linked with the dynamics in the dyad pairs.

5.10 Conclusion

In this chapter, it has become clear that the success of implementing II in a specialist school setting is essentially dependent on the pairing of the pupil and practitioner. I have argued that the II Institute's view that everybody can implement II if they have been trained is rather naïve and although this is a small-scale study, the difference in progression in the three units were significantly different and in one case, II was not implemented by the practitioner. Based on this study, there is no evidence that the II approach is unsuitable for pupils with autism, the lack of progression was seen to be in relation to the practitioner's inability to implement the approach. I have proposed a "Ladder of Intensive Interaction" (Figure 10) with a view to support the progressive development of the skills required to implement II. As we have seen, the effectiveness of the training is dependent on; a) initial input, b) on-going development and reflection and critically c) the knowledge, skills and reflective ability of the practitioner. This would indicate that the implementation of II would be a complex process requiring on-going observation, support and dynamic management responsive to any potential difficulties.

This difference in progression in the pairs is also interesting from a professional development perspective and the findings from this study support the view that making changes in an educational setting is inherently difficult. I have proposed a model of Stages of Professional Development (Figure 11) to focus change implementers on the practitioners' development by utilising the tools that in this project initially was used to as research methods to gather data, however, during the course of the study, these tools became efficient training tools for some people. Further research is needed to understand why some people fail to change despite training, support and various intervention points.

Chapter 6: Conclusion

In this concluding chapter, I will reconsider the challenges of being an insider researcher before proceeding to answer the research questions. This will lead to a summary of the contributions my research has made to the field and the applicability of the findings in different settings. Recommendations for further research are made as new questions have arisen throughout the project.

6.1 Insider researcher

Being an insider researcher in this specialist setting, as head teacher no less, meant that I had a substantial knowledge and understanding of this special education field. I was aware of many different practitioner styles, strengths and development needs of the staff. Yet despite my experience and detailed knowledge of this particular setting, I was surprised by some of the practices I witnessed in the video recordings as they contrasted with my previous understanding of staff practice and pupil experience. Whilst the new insights are welcome as a researcher, they presented a moral dilemma as a head teacher and line manager. Given that my interests are developmental, for staff and pupils, no particular issues arose with respect to my dual role of researcher and head teacher but it is easy to see how that might be the case. In reality, the learning as a head teacher will be invaluable to know about individual practitioner styles and I could use this knowledge to match staff members with pupils. I also know how powerful research methods can be as diagnostic tools but also for personal professional development.

The power dynamics within the research setting are entangled with the change process. As an insider researcher and head teacher I was in a position of power within the school and as such I had to consider carefully this dynamic in relation to this research project. There would be a risk that staff members might not challenge me directly even if they did not agree or because they want to impress. In the case of the *Stayer* all the interactions I had with Rebecca were very positive and she could give accounts as to how she had implemented many points of her learning into practice. She was always very keen and enthusiastic to share her knowledge and newly acquired practices. Included in this was her completion of the questionnaires and, interestingly, she would always require additional time to complete these as she was very keen to share anything she had learnt. Yet the video recorded sequences showed little change in practice and so did not mirror some of the verbal or written accounts given by Rebecca. The explanation may lie in either how she had perceived that her practice had changed or a superficial level of learning that could not be seen in practice or perhaps a combination of these ideas.

Being an insider researcher has given me unique access and insight both in terms of the pupil’s backgrounds and the participating staff. Without being as involved in the setting as I am it would have been difficult to develop the project concept as this was based on knowledge of the existing cohort of pupils and an in-depth knowledge of approaches to teaching pupils with autism. My position as a head teacher has meant that I can involve colleagues, source externally accredited training, collaborate with the staff team and involve the project participants to share knowledge and experiences to benefit the pupils. Throughout this process I have developed a much deeper insight into the setting and becoming a researcher in this setting has made me question many practices within the school in light of the learning experience throughout this project that I have undertaken.

6.2 Limitations of the Study

The researcher considered throughout the project the issue of validity and the limitations of the research methodology. The dyad pairs involved a limited number of pupils and practitioners and this means that the result cannot be issued to make universal or generalised conclusions. However, the project did not set out with this as a primary goal of the research, instead the small sample size and in-depth nature of the research has given unique insights which can help other practice settings or give questions for further areas of research.

Other limitations of this project relate to criticism of the case study approach (Yin, 2014; Thomas, 2016) and the interpretation of the rich data collected. This is subject to potential bias and where possible other frameworks have been utilised to reduce the issue of bias and to minimize the effects of this. The Braun and Clarke (2006) model was utilised to ensure a systematic approach to data analysis was used. The issue of being an insider researcher could also be cited as a limitation although, arguably, it is also a strength of the research to gain unique insights and a unique perspective.

6.3 Contribution to knowledge

The contribution to knowledge from this project are in relation to 1) Training, 2) Ladder of Intensive Interaction and 3) Stages of Professional Development.

1. How do staff member’s skills, abilities, interests and backgrounds influence the change process?

According to Nind and Hewett (1998) anybody should be able to deliver II following a one-day training session and interestingly, they are not assuming any prior knowledge or skills. As TAs are often supporting pupils with autism (Webster & Blatchford, 2013; 2014) II was assumed to be an appropriate approach for this study. However, the findings indicated that the skills, knowledge and background of staff were very important influences on their ability to learn and practice II. The individual units demonstrated that the staff member who had the highest level of training, knowledge and experience was the most receptive to implement the II approach. The findings from this study suggest that this had a direct correlation with the pupil’s achievement and outcomes.

The training provided for this project was offered in the form of a typical training day involving an external trainer delivering a presentation which would be followed up by a questionnaire. This project demonstrated clear limitations with this and although the questionnaires demonstrated that the training had been successful in raising practitioner’s awareness of II, this awareness was not demonstrated in practice. II training needs to be further developed so that practitioners are better equipped to transfer their learning in practice.

Some of the data collection tools, specifically VSR and warm and cool feedback sessions, proved to be effective training tools that encouraged the practitioners to reflect on practice, both individually and in groups. This would promote a culture of sharing skills and experiences in a supportive environment that would develop a shared language and raise the competence of the team.

2. How does the staff team respond to; and utilise the training?

The practitioner who demonstrated the highest level of II practice facilitated an enhanced experience for the pupil. This was particularly evidenced in the difference between the *Changer* and the *Reflector* units in which the same pupil featured in both dyad pairs. It is important that II training accommodates different backgrounds as the reality is that TAs are often key staff supporting autistic pupils learning. I am suggesting that a tool to support this would be of benefit and propose a stepped approach to this called "Ladder of Intensive Interaction" (Figure 10) in which the practitioner needs to demonstrate competence in one step before moving on to the next.

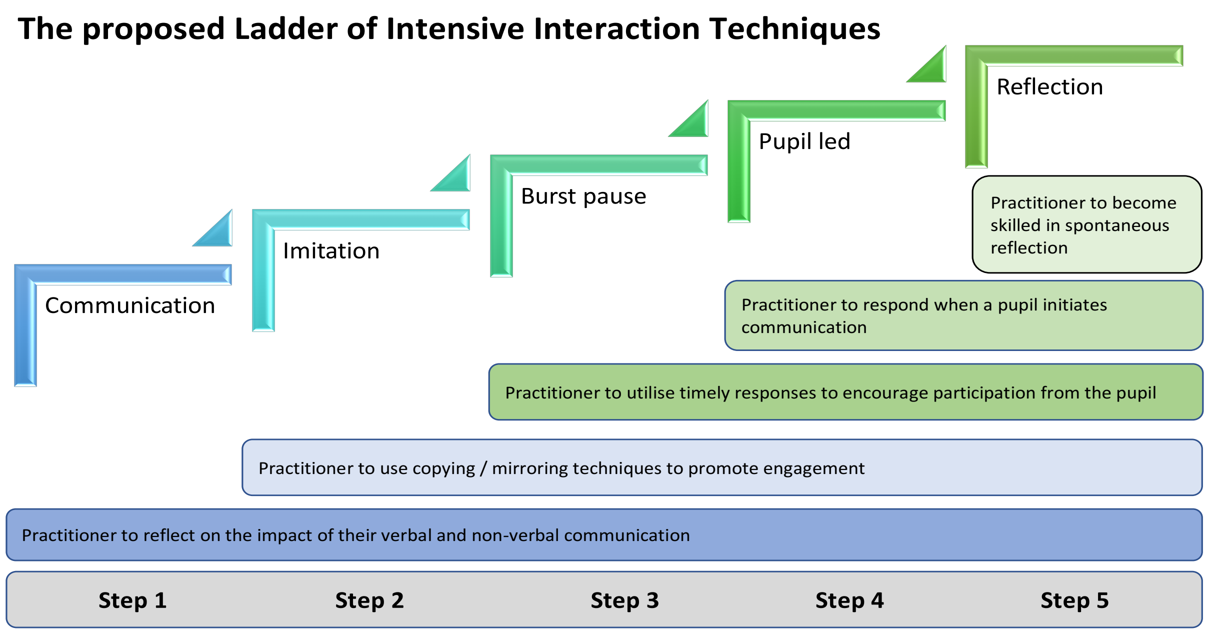

Figure 10: The proposed Ladder of Intensive Interaction

The impact of such a model would need to be tested out in further research into this approach.

3. What factors contribute to the embedding of the "new" teaching practice?

This project concurs with the literature in relation to the complexity of making a change in an educational setting. There were a number of factors impacting on the outcomes in the three units, in particular, the practitioner's personal and professional characteristics and receptiveness to a change in practice was demonstrated to influence the change process. This led to the proposed model, Stages of Professional Development (Figure 11) that aims to clarify the process of development, both in terms of input from change leaders and also the practitioner response to the process. It is important to scaffold each stage to support the practitioner to achieve the next stage of development. Change leaders need to be aware of the potential for the practitioner to revert to previous habits and support the practitioner through the identified stages of professional development.

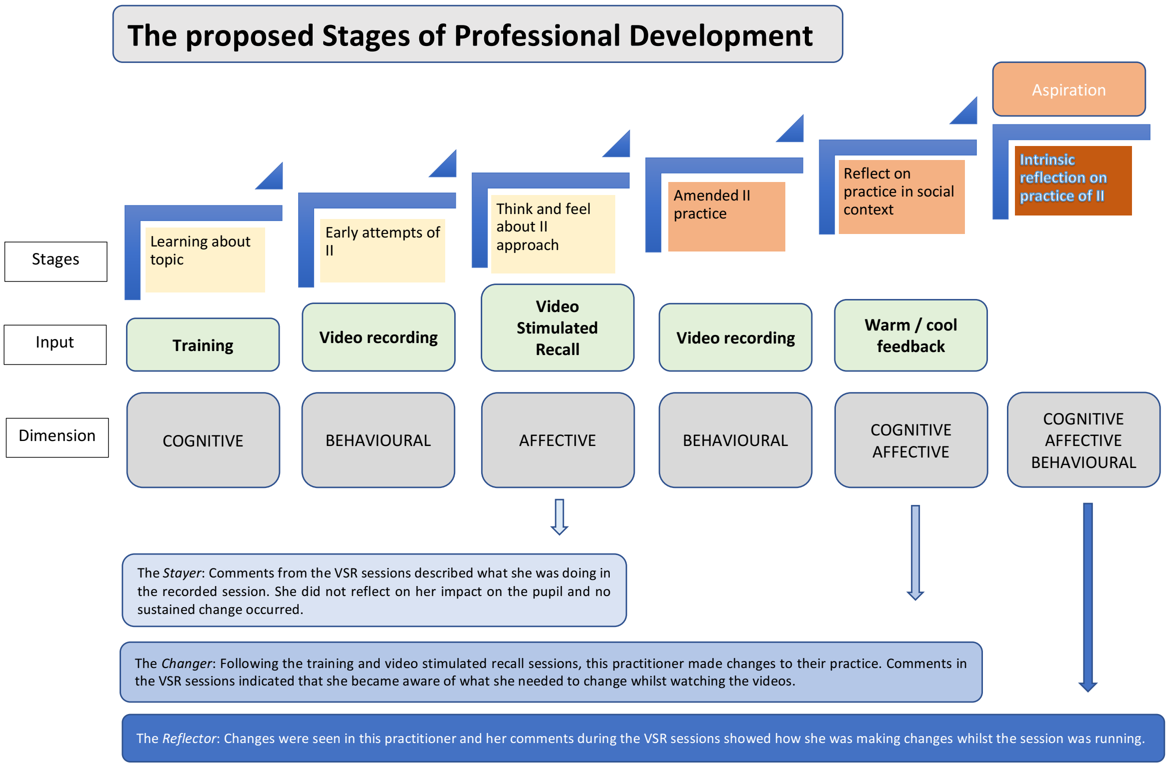

Figure 11: The proposed Stages of Professional Development

This model is not just limited to the implementation of II, it is designed to support any process involving practitioner's professional development in an education setting. It is acknowledged that this is a small-scale study so further research would be needed to establish if this model can be a useful tool for leaders looking to support teacher's professional development.

6.4 Recommendations for further research

This has been a small-scale project and based on the findings from this study I would recommend four main areas for future research. These would be:

1. For further research to be carried out on implementing II utilising the proposed model "Levels of Intensive Interaction Techniques" to see if this model can support progressive practitioner development in the skills required for this approach.

2. For further research to be carried out utilising the *"Stages of Professional Development"* model to determine if the proposed model can support change and development within educational settings.

3. For further research to be carried out to determine whether VSR and warm and cool feedback could effectively support teachers professional development.

4. For further research to be carried out into current teacher training models in the UK to enable teacher's to effectively support pupil's with autism.

6.5 Final thoughts

When starting this study, I was quite mindful that being an insider researcher could compromise my ability to critically engage with the collected data. The awareness of me being embedded in the very context of the study led to a period of challenging my own views and reflecting on these based on the data I collected. This study has shown me the value of reflecting on my own views to develop new understandings about the possibilities of educating pupils who are very hard to reach.

I did initially think that the pupil's in this study may not have the ability to relate and engage with others, however, during the project I became much more aware that the practitioners need to develop an ability to relate and engage with the pupil's. It is not just the learning programmes that needed to be personalised, the adults approach to the pupil needed to be personalised too! A key learning for me was how important it is to ensure the practitioners are given the tools they need to effectively educate the autistic learners.

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Appendices

Appendix 1 Research ethics approval form

2013/47/JG

School of Education – Research Ethics Approval Form

Name	Wendy Sparling
Main Supervisor	Professor Andy Noyes
Course of Study	PhD
Title of Research Project:	An evaluation of the processes involved in the implementation of Intensive Interaction into a special school environment with pupils with Autism, Severe Learning Difficulties And Challenging Behaviour
Is this a resubmission?	No

Date statement of research ethics received by PGR Office: 02/04/13

Research Ethics Coordinator Comments:

I have read through all the documents relating to this submission and I am satisfied they meet the necessary conditions to be granted ethical approval.

I consider this research to be above minimum risk ☐

Outcome:
Approved ☑ Revise and Resubmit ☐

Signed: Name: Dr Julio Gimenez (Research Ethics Coordinator) Date: 16.04.2013

Appendix 2 Information and consent sheet

School of Education – PGR statement of Research Ethics – Wendy Sparling

Checklist attachments

A brief statement of my research aims or questions and proposed methods of data generation

My research is focused on the implementation of a specific approach of Intensive Interaction in a specialist education setting. The pupil group have severe learning difficulties, Autism and Challenging Behaviour and receive a high level of staff input and are on a minimum of 1:1 staffing ratio.

My question relates to the implementation process of this approach within a specialist autism specific environment and considers how this in-depth understanding contributes to knowledge with pupils with complex and multiple needs. The next question for consideration is how the sustained use of this approach over a period of time works for complex learners and finally, how workable strategies for evaluating the effectiveness can be devised in this unique context.

By utilising a case study approach to focus upon two unique individuals the data collection methods draw upon a range of research instruments to collect information for analysis. Staff who will be trained in this approach and will be involved in the implementation with pupils will be asked to complete questionnaires. The use of video will provide evidence for analysis throughout the project and the use of educational data will be utilised as will an autism specific profile which will be completed before and after the project.

A brief statement of how I plan to gain access to prospective research participants

Access to the research participants should be relatively straight forward once all of the relevant permissions have been sought as I am Principal of this school and I have sought permission from my employers. I am aware of the potential difficulties this may bring in relation to staff members however they would all clearly be aware of their right to withdraw and fully aware before they consented to be a participant.

A draft information sheet for prospective participants

Intensive Interaction Research Project – Information for participants

What is Intensive Interaction?

Intensive Interaction is a teaching approach developed by Melanie Nind and Dave Hewett which has been shown to be effective in promoting communication skills for pupils with severe learning difficulties and Autism. It is a gentle and respectful approach based on the process of infant – caregiver interaction and aims to develop the skills of early communication. Intensive interaction has been documented and evaluated and this has shown some positive outcomes for individuals. There is a need to evaluate the effectiveness of this approach to understand its impact further.

What will the project involve for my child?

The teaching approach of Intensive Interaction will be delivered as a training package to staff. The teacher and teaching assistant will incorporate this training into the delivery of the curriculum for your child. This research project is part of the EdD thesis, for which a supervisor has been allocated from Nottingham University. With your permission I would like to video [Pupil X] on a regular basis over a period of two terms so that we can analyse his/her progress.

The video recording will take place in the normal environment within a routine class lesson. The video tapes are entirely confidential and will only be seen by members of staff working with [X} and the research supervisor and will be available to yourself should you wish to see any of the material.

The other data which would be of interest for the purpose of this research is permission to use data already gathered for academic progress monitoring and an additional research tool to build an understanding of your child's strengths and difficulties in relation to their autism profile which would be completed at the beginning and end of the research.

Will we be informed of the outcome of the project?

A summary feedback sheet will be provided at the end of the project and I would be happy to answer questions at any time throughout the project.

Consent

You may find some of the literature helpful in the reading list. If you are happy for [pupil X] to be involved in the study please can you sign the attached consent form.

Suggested Reading

Hewett, D. & Nind, M. (eds) (1998) Interaction in Action: Reflections on the use of Intensive Interaction. London: David Fulton

Nind, M. & Hewett, D. (2001) A Practical Guide to Intensive Interaction. Kidderminster: BILD Publications

Nind, M. & Hewett, D. (1994) Access to communication: Developing the basics of Communication in People with Severe Learning Difficulties through Intensive Interaction. London: David Fulton

A draft consent form to be used with prospective participants

PARTICIPANT CONSENT FORM

{This consent form is for parents of pupils selected to participate in this research.}

Project title An evaluation of the processes involved in the implementation of Intensive Interaction into a special school environment with pupils with Autism, Severe Learning Difficulties and Challenging Behaviour.

Researcher’s name Wendy Sparling

Supervisor’s name Prof. Andy Noyes

I have read the Participant Information Sheet and the nature and purpose of the research project has been explained to me. I understand and agree for my child to take part.

I understand the purpose of the research project and my Child involvement in it.

I understand that I may withdraw my child from the research project at any stage and that this will not affect his/her status now or in the future.

I understand that while information gained during the study may be published, my child will not be identified and personal results will remain confidential.

I understand that my child I will be videotaped at regular intervals throughout the project.

I understand that data will be stored securely and only the researcher or supervisor will have access to this information.

I understand that I may contact the researcher or supervisor if I require further information about the research, and that I may contact the Research Ethics Coordinator of the School of Education, University of Nottingham, if I wish to make a complaint relating to my child's involvement in the research.

Signed ……………………………………………………………………… (research participant parent)

Print name ……………………………………………………………… Date …………………………………

Contact details

Researcher: wendysparling@hotmail.co.uk

Supervisor: andy.noyes@nottingham.ac.uk

School of Education Research Ethics Coordinator: educationresearchethics@nottingham.ac.uk

Appendix 3 Example of initial coding VSR

FEEDBACK FROM KERRY VSR

Jenna

I think on this bit, she is not bothered about me being there at all. I think she is not totally bothered at all about what I am doing and I don't think she has any awareness.

If I didn't start engaging with her at this point, then she probably would have carried on messing by herself. She will entertain herself with that for a few seconds and then start spinning again, but because I did start making that interaction with her that's where she started to notice and joined in.

There, she is amazed that I am actually putting it towards my mouth. She wasn't sure I was going to copy her, because as soon as I did that, she was like "Are you really doing that"? I don't think she was expecting me to copy her; I didn't actually put it in my mouth. That's where she rocked towards me; she did actually rock for a better look. She did properly look at me.

She dropped hers and pinched mine. That is what happened. I had got two; I purposely picked up two and she dropped hers and then stole mine off me because she wanted one. She accidentally dropped hers and stole mine.

She is fascinated there that I am pretending to spit stuff out because she is really watching, because I didn't have anything to spit out, where she is spitting out the bits that have gone into her mouth and she actually keeps doing it for ages. I am not convinced there is much more in her mouth, but she was actually really watching me as I was pretending to spit stuff back out.

That's me going (blowing) back at her and she is doing it again I think she was about to start whistling, I went (blowing) and she went "Oh (blowing)" and she engages there quite nicely. Every time I blow she (illegible). She is tolerating me taking it out of her mouth quite well; I wasn't prepared to let that go in any further.

She has thrown hers there for me to do it after her and I am fairly sure it was the air as much as the noise that is why she was doing it. She ditched hers and immediately watched what I was doing.

That is definitely why she has come right up close and that "mo" is her "more", so she is verbally requesting more there. She was clearly enjoying it and requesting more.

I think she is putting her hand up to feel the air (illegible).

I think that is her kind of zoning out a bit after that sort of proper interaction, I think this is her stepping back a bit for her own sake because she will do it for a while and she almost needs a break herself from it and she does seem to monitor that interaction and engagement and that spinning is kind of her time out.

That is unusual to hear her sort of almost singing like that. That noise is more familiar, but she was almost kind of a bit tuneful for a few seconds there.

She is quietly doing it in the background. That's her. Earlier just before that, when I started doing it, she was very quietly doing it in the background based on my microphone and that is quite unusual to hear that kind of singing almost. It sounded like she said "go away". She is quite tuneful, but normally she will kind of do the "mo" but it is very rare to hear her playfully using her vocals really. She was very happy.

FEEDBACK FROM JACOB VSR

Rebecca

J doesn't want to interact at this point; I am really trying to make him try and come out of himself. The one thing that always works with J is edible rewards most times, so this is the reason that I have food at this time so I can get interaction going with him. There when I am asking for a smile, I am just trying to get his eye contact just so that I know that he is going to start interacting with me.

Here you can see that J's hands are all tied up. When his hands are tied up like that, he sort of goes into his own little world and he doesn't want to interact, so the whole thing is to get him to come and take it off me; he has to undo his hands and then his hands become free and he becomes a bit more relaxed and then it is easier for me to interact with him. His hands are free now. So I have put them away (edible rewards) because I have got his attention now.

At this stage, this is J getting hyper. If I just left J, he would start pacing the room and start tipping things, but because I am interacting with him he is just on that border where I can bring him back down so that he doesn't go. His vocals are telling me that he wants me to leave him alone. You can see that he brings his face closer; J loves that interaction on his face. Have you noticed he brings his face forward for you to do it more?

When he is doing that, he loves you to mimic it; it's like he is talking to you and again it brings him out of himself when he is snuggled up and doesn't want to do anything, but I find that if I mimic his sounds, I get his eye contact and his attention fully and then he starts smiling and you can see that he is enjoying that.

Here he keeps trying to go away because he doesn't want to do it, but he is bringing his eyes back up so that I can see his face and he can see my eye contact so we can just keep carrying on with what we are doing.

You can see that I have got proper eye contact with him. You can see he is coming for it more. Again, with J when I say to him "do you want it again", J will say "p(lease)" if he wants it again and will look at you with a blank stare if he doesn't want it. It's the same when I am offering him anything, I ask him "do you want more" and if he does he says "p" and if he doesn't he just stares blankly.

Here, I know that I have got his attention because we are taking it in turns and even though there is nothing coming out, I feel that I am talking to him and I know that I have got his attention because I am taking a turn and he is taking his turn.

Key

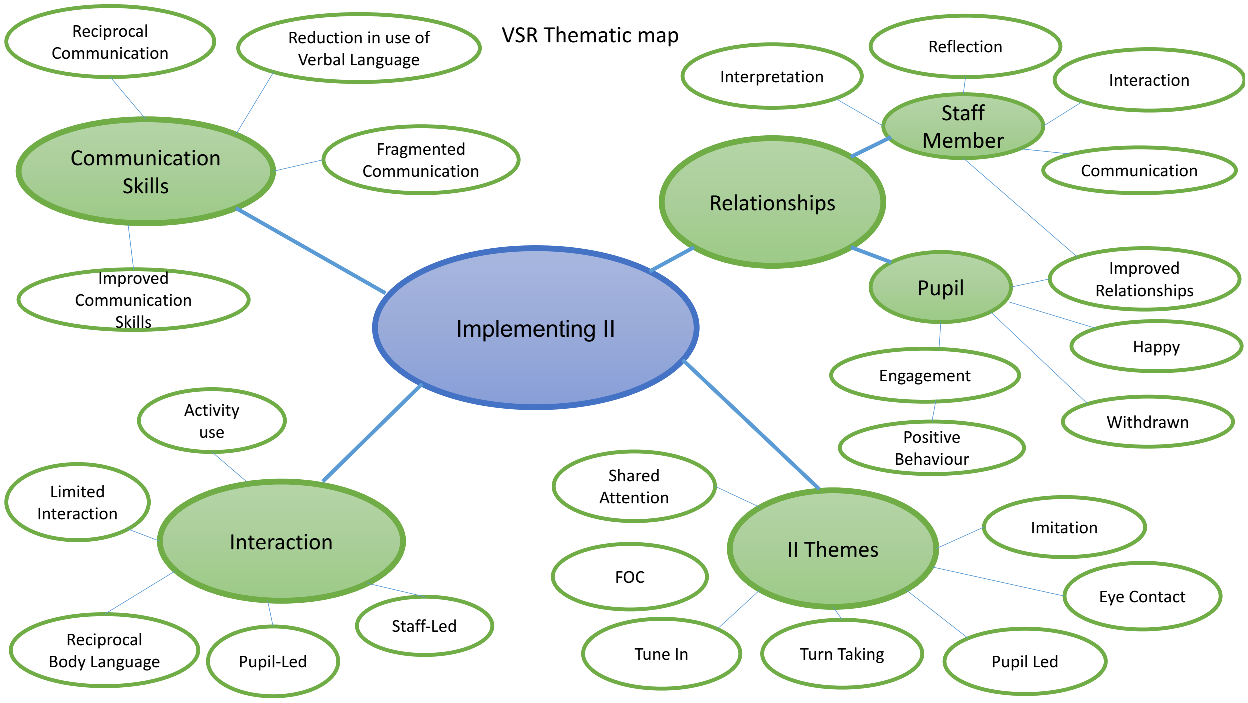
Interpretation of what the pupil feels

Staff members' behaviour

Anecdotal experiences from the past

Pupil behaviour

Appendix 4 Thematic map VSR



Appendix 5 Questionnaires

Questionnaire 1

Please take your time and think carefully about your response to each question

Name...
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Length of time in current post...

Length of time working in this line of work..

When you are working with the pupils in this school what do you think are the most important things to consider when interacting with individuals and explain why these things are important?

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What does the term intensive interaction mean to you?

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What do you consider your role to be in delivering intensive Interaction?

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What potential benefits do you think could be achieved by using intensive interaction? For

the pupil?

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b) the staff member?

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Are there any potential difficulties you can think of which may be a problem when using intensive interaction at this school and explain your answer?

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How important do you think the following are to the Intensive Interaction process?

The following processes are important in intensive interaction………

	Strongly agree	Agree	disagree	Strongly disagree
Taking turns at interacting				
Non-verbal				

communication				
Entertaining				
Using eye contact				
Using facial expression				
Developing shared attention				
Speaking				
Leading / directing				
Enjoyment				

Thank you for your time and assistance in filling out this questionnaire.

Questionnaire 2

Please take your time and think carefully about your response to each question

Name...

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Following the training on Intensive Interaction this week, what key points do you take away to enhance your understanding?

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In light of the training you have received, what does the term intensive interaction mean to you?

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In light of the training you have received, what do you consider your role to be in delivering intensive Interaction?

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Following your recent training, what potential benefits do you think could be achieved by using intensive interaction? For

the pupil?

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b) the staff member?

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What potential barriers could you foresee when using intensive Interaction at this school? Explain your answer.

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In order to embed the practice, knowledge and skills in Intensive Interaction following this training, what do you feel are they key elements to ensure its successful implementation as a whole school approach?

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How important do you think the following are to the Intensive Interaction process?

The following processes are important in intensive interaction………

	Strongly agree	Agree	disagree	Strongly disagree
Taking turns at interacting				
Non-verbal communication				
Entertaining				
Using eye contact				
Using facial expression				
Developing shared attention				
Speaking				
Leading / directing				
Enjoyment				

Thank you for your time and assistance in filling out this questionnaire.

Questionnaire 3

Please take your time and think carefully about your responses to each question

Name...
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Do you feel that the training you received in January has impacted on your practice?

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Which three key points have been important to your practice in delivering intensive interaction?

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After the implementation of intensive interaction, what benefits have you seen for:

the pupil?

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b) the staff member?

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What barriers have you seen during the implementation process of Intensive Interaction?

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Do you feel that you have received adequate training and support to develop your practice and skills to successfully implement Intensive Interaction as a whole school approach?

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What are the key elements to successful implementation of Intensive Interaction?

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How important do you think the following are to the Intensive Interaction process?

The following processes are important in intensive interaction………

	Strongly agree	Agree	disagree	Strongly disagree
Taking turns at interacting				
Non-verbal communication				
Entertaining				

Using eye contact				
Using facial expression				
Developing shared attention				
Speaking				
Leading / directing				
Enjoyment				

Thank you for your time and assistance in filling out this questionnaire.

Appendix 6 Questionnaire analysis – topic development

Questionnaire analysis – Question topic development and links

Question	Questionnaire 1	Questionnaire 2	Questionnaire 3
Important things to consider when interacting with the pupils? Why?	Qu 1		
What does the term II mean to you?	Qu 2	Qu 2	Qu 2
After training what does II mean to you? And in practice?		Qu 1	Qu 1
What is your role in delivering II?	Qu 3	Qu 3	
Potential benefits of using II for (i) pupil (ii) staff member?	Qu 4	Qu 4	Qu 3
Potential difficulties and barriers to implementation?	Qu 5	Qu 5	Qu 4
Key elements to embed and implement?		Qu 6	Qu 6
Have you received adequate training			Qu 5

and support to develop, practice and implement II within the school?			
Characteristics of II rating	Qu 6	Qu 7	Qu 7

Appendix 7 Questionnaire analysis – Initial codes

Questionnaire analysis – Initial codes

Question	Questionnaire 1	Questionnaire 2	Questionnaire 3
Important things to consider when interacting with the pupils? Why?	Knowledge of individuals (x5); pupil lead (x2); positivity (x2); pupil communication (x2); empathy; rapport; child's basic need; praise; respect; trust; safety; same height; relationship; right level; safeguarding; independence; dignity; and patience		
What does the term II mean to you?	Relationship building (x7); Non-verbal communication (x6); Infant caregiver interaction (x4); Pupil-adult interaction (x4); skills and knowledge building of the pupil (x3); 1:1; and supports learning	Interacting (x8); communicating (x5); fun (x5); Infant care-giver interaction (x3); empathy (x2); turn-taking (x2); led by the pupil (x2); relationship building (x2); reduces CB; promoting happiness; security; safety; shared attention; likes and dislikes of a pupil; eye contact; imitating; joining in; and pupil's pace	Communication (x7); Young person leading (x7); relationships (x5); turn-taking (x4); interaction (x3); reflection (x2); environment (x2); sharing personal space (x2); minimal language; enjoyment; empathetic; confidence

After training what does II mean to you? And in practice?		Fun (x7); Pupil's lead (x5); repeating (x5); communicate (x3); eye contact (x3); slow pace (x3); Fundamentals of communication (x2); reduce CB (x2); Flexibility (x2); increased understanding (x2); learning pupil's likes and dislikes (x2); on pupil's level; shared language; space; infant caregiver approach; don't over impose; and tune-in.	Improved practice (x7); increased understanding for staff (x4); improved communication for the pupils (3); cemented the approach; learn to let the pupil's lead
What is your role in delivering II?	Major part of the job role (x4); pupils to enjoy (x4); identify opportunities for II (x3); gaining attention (x2); pupil starting point (x2); knowing what pupils want (x2); getting pupils to respond to you (x2); staff to interact with pupils; to lower pupil's anxiety; to work towards targets	To be an effective communicator (x3); fun (x4); be available (x2); be positive (x2); to help focus pupil's; to be responsive; enjoy interacting; to make opportunities; encourage others; and to be person-centred.	
Potential benefits of using II for (i)	Pupil: to build communication	Pupil: to build relationships	Pupil: Increased

pupil (ii) staff member?	skills (x9); relationship building (x5); trust (x2); and provide focus (x2) Staff: to understand the pupil's needs (X8); to communicate effectively (x3); to use II as a positive tool (x2); and to build confidence	(x5); to develop communication (x5); Fun (x4); turn-taking (x1); enjoyment; shared interest; eye contact; reduce CB; to be happy; to build awareness; trust; and confidence Staff: to build relationships (x7); to build understanding (x6); to improve communication (x5); to have fun; to promote interaction; and to improve pupil knowledge	enjoyment (x8); Improved relationships (x4); improved communication (x4); increase in positive behaviour (x2); increased confidence (x2); consistent eye contact (x2); improved concentration; development of turn-taking skills; and improved initiation skills Staff: positive relationships (x7); improved understanding (x4); improved confidence (x4); better communication (x3); enjoyment (x2); trust; new skills; connection with young person; and less CB
Potential difficulties and barriers to implementation?	Unpredictability of the pupil group (x4); training of staff with high turnover (x2); proximity in classrooms; willingness to engage from staff; staff using initiative; staff could be hurt; lack of understanding;	Confidence (x5); unpredictability of pupils (x2); staff being afraid (x2); relationships (x2); knowledge (x2); staff ability (x2); consistency (x2); all pupils need differing approaches; understanding; enthusiasm;	Reluctance from the young person (x3); No barriers (x3); staff leading not letting the pupil lead; overstimulation of pupil; challenging behaviour of pupils; lack of resources; confidence of staff; staff

	and over-stimulation of the pupils	over-stimulating them; and no barriers	knowledge; and the need for distraction free environment
Key elements to embed and implement?		To use monitoring forms (x5); evaluations of sessions to be completed (x3); regular on-going training (x3); consistent staff (x3); to increase staff's confidence (x3); low distraction environments; all staff to implement; to have a good knowledge of II; and to utilise information sharing	Pupil-led approach (x7); Fun / enjoyable approach (x6); eye contact (x3); Use of body language (x2); understanding the approach (x2); turn-taking (x2); using minimal language; using II techniques; staff confidence; relationship building; and having the right environment
Have you received adequate training and support to develop, practice and implement II within the school?			Yes = 12 staff More training required = 2 staff