ASSESSMENT OF A NEW EDUCATIONAL PROGRAMME USING EMOTIONAL UNDERSTANDING AND SOCIAL INTERACTION IN CHILDREN WITH HIGH-FUNCTIONING AUTISM

SUBMITTED BY WEJDAN ABDULLAH ALSAKRAN TO THE UNIVERSITY OF EXETER

AS A THESIS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY IN EDUCATION

IN JULY 2013

THIS THESIS IS AVAILABLE FOR LIBRARY USE ON THE UNDERSTANDING THAT IT IS COPYRIGHT MATERIAL AND THAT NO QUOTATION FROM THE THESIS MAY BE PUBLISHED WITHOUT PROPER ACKNOWLEDGEMENT.

I CERTIFY THAT ALL MATERIAL IN THIS THESIS WHICH IS NOT MY OWN WORK HAS BEEN IDENTIFIED AND THAT NO MATERIAL HAS PREVIOUSLY BEEN SUBMITTED AND APPROVED FOR THE AWARD OF A DEGREE BY THIS OR ANY OTHER UNIVERSITY.

SIGNATURE: ..............................
Abstract

This thesis is concerned with the key areas of social interaction and emotional understanding in children with autism with regard to their development. This study evaluated the effectiveness of a ten sessions long intervention programme with the objective of facilitating the children’s social-emotional understanding, as well as promoting their social skills and interaction with both peers and adults. Two methods of studies were used with 6 children - aged 7 to 11 - who had previously been diagnosed with high-functioning autism. The quasi-experimental study divided the sample into an experimental and control group in order to evaluate the intervention. The second method was a case study involving two children in the experimental group. Both approaches provided evidence of the effectiveness of the intervention programme in enhancing the social and emotional components. The results from the first study showed that the intervention programme was associated with improvements for the children in the experimental group in their overall social-emotional understanding, as well as their social skills and interaction with their peers. Moreover, there was strong agreement between the three sources (parents, teachers and children) about this improvement, which supports the reliability of the outcomes. On the other hand, children from the control group did not improve in the tested areas. The results from the second study revealed the typical description of emotional and social deficits in the two children with high-functioning autism. In each case there were specific aspects to their level of difficulties and the way in which they interacted with their friends and family. The data collected after the intervention supports the hypothesis that children with autism can learn emotional understanding (including empathy), and this was associated with an improvement in their social functioning. The case studies also showed agreement between the parents in their dissatisfaction about the level of support that their children received at school. None of the children had received any type of social training programme particularly aimed at teaching them these specific skills. The two methods of evaluation complemented each other. Although caution should be taken when interpreting the findings, owing to the small sample size, the study suggests that children with high-functioning autism respond well to interventions designed to support their social and emotional understanding.
## Contents

**ABSTRACT** .................................................................................................................................................. 2

**CONTENTS** ................................................................................................................................................ 3

**INDEX OF FIGURES** ................................................................................................................................. 10

**INDEX OF TABLES** .................................................................................................................................... 13

**ACKNOWLEDGEMENTS** ............................................................................................................................ 15

**ABBREVIATIONS** ....................................................................................................................................... 16

**CHAPTER 1 - INTRODUCTION** ................................................................................................................. 17

1.1 - Introduction ...................................................................................................................................... 17

1.2 - Rationale and personal interest of the study ..................................................................................... 18

1.3 - General aims and design of the study ................................................................................................. 20

1.4 - Structure of chapters .......................................................................................................................... 22

**CHAPTER 2 - LITERATURE REVIEW** ....................................................................................................... 24

2.1 - Introduction ...................................................................................................................................... 24

2.2 History of autism ................................................................................................................................. 24

2.3 - Diagnostic criteria and areas of impairment ..................................................................................... 28

2.3.1 - Argument for the necessity of diagnosis ....................................................................................... 32

2.3.2 - Causes of Autism .......................................................................................................................... 34

2.3.3 - Incidence of autism ....................................................................................................................... 36

2.3.4 - Autism approaches and interventions .......................................................................................... 38

2.3.5 - Review of studies that evaluate autism approaches and intervention ........................................ 47

2.3.6 - School placement and policies in the UK ...................................................................................... 49

2.4 - Literature review ............................................................................................................................... 52
2.4.1 - Impairments of children with high-functioning autism in their social skills and emotional understanding

2.4.2 - Review of the literature of previous interventions, their outcomes and limitations

2.5 Theories of autism and their relevance to the focus of the study

2.5.1 – Theory of mind (TOM)

2.5.2 Critique of the TOM and its relevance to the current study:

2.5.3 Empathy in TOM and its relevance to the current study:

2.5.4 Central Coherence Theory (C C)

2.5.5 Critique of WCC theory and its relevance to the current study

2.5.6 Executive Function theory (EF)

2.5.7 Critique of the EF theory and its relation to the current study

2.5.8 The social learning theory

2.5.9 Social learning theory through the autism lens and its relevance to the current intervention

2.5.10 The challenge of modelling for children with autism

2.6 - Techniques used to develop the intervention programme

2.6.1 - The “reading the mind” test

2.6.2 - Mind-reading computers

2.6.3 - Play therapy

2.6.4 - Using social stories

2.7 - Aims and objectives of the current intervention study

2.8 - Research questions

2.9 - Hypotheses of the study

2.10 - Conclusion

CHAPTER 3 - DEVELOPMENT OF THE INTERVENTION PROGRAMME
3.4.3 - Programme procedures ......................................................................................... 110
3.4.4 - Type of intervention approach .............................................................................. 111
3.4.5 - Rewarding system ................................................................................................. 111
3.4.6 - Recording the progress of the sessions ................................................................. 112

3.5 - Sessions .................................................................................................................. 114

3.5.1 - Session 1 ............................................................................................................... 114
3.5.2 - Session 2 ............................................................................................................... 119
3.4.3 - Session 3 ............................................................................................................... 122
3.5.4 - Session 4 ............................................................................................................... 125
3.5.5 - Session 5 ............................................................................................................... 128
3.5.6 - Session 6 ............................................................................................................... 131
3.5.7 - Session 7 ............................................................................................................... 134
3.5.8 - Session 8 ............................................................................................................... 138
3.5.9 - Session 9 ............................................................................................................... 141
3.5.10 - Session 10 .......................................................................................................... 142

3.6 - Piloting the intervention programme ..................................................................... 145

3.6.1 - Purpose of piloting the intervention programme: .............................................. 146

CHAPTER 4 - METHODOLOGY ...................................................................................... 148

4.1 - Introduction ............................................................................................................. 148

4.2 - Research design ..................................................................................................... 148

4.2.1 - The quasiexperimental research methodology .................................................. 148
4.2.2 - Case study research methodology .................................................................... 150
4.2.3 - Mixed Methodology design .............................................................................. 153

4.3 - Study one ............................................................................................................... 156

4.3.1 - Research Design: ............................................................................................... 156
4.3.2 - Dependent Variables .......................................................................................... 156
4.3.3 - Sampling .............................................................................................................. 159
4.3.4 - Assessment and procedures ............................................................................... 162
4.3.5 - Role of the researcher and her effect on validity and reliability ..................... 172
4.3.6 - Administration .................................................................................................. 173
4.3.7 - Evaluation of the intervention progress ............................................................. 174
4.3.8 - Role of the research assistant ......................................................................... 175
4.3.9 - Data analysis ...................................................................................................... 176
4.4 - Study two ..................................................................................................................177
  4.4.1 - Aims of case studies ..........................................................................................178
  4.4.2 - Selection Criteria ..............................................................................................179
  4.4.3 - Interviews .........................................................................................................180
  4.4.4 - Reliability and validity ......................................................................................182
  4.4.5 - Follow-up interviews ......................................................................................182

4.5 - Data analysis ...........................................................................................................184

4.6 - Ethical issues ..........................................................................................................186

4.7 - Conclusion .............................................................................................................188

CHAPTER 5 - EVALUATING THE INTERVENTION PROGRAMME............................190

5.1 - Programme process evaluation ............................................................................190

5.2 - Session-by-session summary of activities undertaken and children’s progress and observations ......191
  5.2.1 - Session one ......................................................................................................191
  5.2.2 - Session two .....................................................................................................194
  5.2.3 - Session three ..................................................................................................197
  5.2.4 - Session four ....................................................................................................201
  5.2.5 - Session five .....................................................................................................204
  5.2.6 - Session six ......................................................................................................208
  5.2.7 - Session seven ..................................................................................................212
  5.2.8 - Session eight ...................................................................................................217
  5.2.9 - Session nine ....................................................................................................220
  5.2.10 - Session ten ....................................................................................................224

5.3 - A summary of each child’s responses on the activities in sessions according to observation........227

CHAPTER 6 - EXPERIMENTAL PROGRAMME OUTCOMES......................................237

6.1 - Introduction ............................................................................................................237

6.2 - An overall score of individual children at pre- and post-level ......................................237

6.3 - Individual presentation of assessment measures .......................................................239
  6.3.1 - Social skills questionnaire ...............................................................................239
  6.3.2 - Spence’s social competence with peers questionnaire ......................................243
6.3.3 - Social skills parents’ questionnaire .................................................................245
6.3.4 - Social competence parents’ questionnaire .........................................................246
6.3.5 - Social skills teachers’ questionnaire .................................................................248
6.3.6 - Social competence teachers’ questionnaire .......................................................248
6.3.7 - Social skills pupils’ questionnaire .................................................................249
6.3.8 - Social competence pupils’ questionnaire .........................................................250
6.3.9 - BarOn EQ-I; YV .........................................................................................251
6.3.10 - Social/emotional checklist .............................................................................254

6.4 - Change of scores in all the variables ........................................................................256
6.5 - Change of score in the experimental group ............................................................257
6.6 - Change of score in the control group .......................................................................259
6.7 - Conclusions .............................................................................................................260

CHAPTER 7 - CASE STUDY ANALYSIS ........................................................................261
7.1 - Introduction .............................................................................................................261
7.2 - Data recording .........................................................................................................261
7.3 - Case analysis in qualitative data in tables ..............................................................261
    7.3.1 - Parents’ Interviews ..........................................................................................266
    7.3.2 - Teacher Interviews .......................................................................................287
7.3.3 - Children’s Interviews .........................................................................................295
7.4 - After the Intervention ............................................................................................303
    7.4.1 - Parents’ Follow up Interview: ........................................................................303
    7.4.2 - Teachers’ Follow up Interview ......................................................................307
    7.4.3 - Children’s Follow up Interview: .....................................................................309
7.5 - Assessments ............................................................................................................312
7.6 - Qualitative and quantitative analysis ......................................................................316
7.7 - Summary of similarities ..........................................................................................322
7.8 - Conclusion ..............................................................................................................323
CHAPTER 8 - DISCUSSION AND CONCLUSION.................................................................325

8.1 - Introduction ........................................................................................................325

8.2 - Design of the programme ..................................................................................325

8.3 - Experimental study - findings and limitations .......................................................328

8.4 - Issues with experimental design and factors that might influenced the findings ................336

8.5 - Case study findings and limitations ....................................................................339

8.6 - Integrating findings and implications of both studies ..........................................350

8.7 - Overall conclusion ............................................................................................356

REFERENCES .................................................................................................................357

APPENDIX 1 - HOME ACTIVITY 1 .............................................................................369

APPENDIX 2 - HOME ACTIVITY 2 .............................................................................371

APPENDIX 3 - HOME ACTIVITY 4 .............................................................................373

APPENDIX 4 - HOME ACTIVITY 5 .............................................................................375

APPENDIX 5 - COPY OF THE RESEARCH ETHICAL APPROVAL .............................376

APPENDIX 6 - SAMPLE OF A SITUATIONAL FEELING ...........................................380

APPENDIX 7 - LETTER TO PARENTS ........................................................................381

APPENDIX 8 - SOCIAL COMPETENCE WITH PEERS QUESTIONNAIRE (PUPILS) .................................................................384

APPENDIX 9 - SOCIAL COMPETENCE WITH PEERS QUESTIONNAIRE (TEACHERS) ..................................................................................................................385
APPENDIX 10 - SOCIAL SKILLS QUESTIONNAIRE (PARENTS) .........................386

APPENDIX 11 - SOCIAL SKILLS QUESTIONNAIRE (PUPILS) .........................388

APPENDIX 12 - SOCIAL SKILLS QUESTIONNAIRE (TEACHERS) .........................390

APPENDIX 13 - BARON EQI: YV ..................................................................392

APPENDIX 14 - TABLE OF PARENTS’ INTERVIEW ........................................394

APPENDIX 15 - TABLE OF TEACHERS’ INTERVIEW ......................................398

APPENDIX 16 - TABLE OF CHILDREN’S INTERVIEW ......................................400

APPENDIX 17 - SAMPLE OF CASE STUDY TRANSCRIPT (OLIVER’S MOTHER) .................................................................................................................402

APPENDIX 18 - RESEARCHER’S DISCLOSURE CERTIFICATE ..........................410

APPENDIX 19 - FREDDIE & OLIVER’S ASSESSMENT REPORT FOR CASE STUDY ........................................................................................................411

APPENDIX 20 - SUMMARY OF CASE STUDY INTERVIEWS ...............................426

   B.  Teacher Interviews ..................................................................................439

APPENDIX 21 - AFTER THE INTERVENTION ..................................................448

   1.  Parents’ Follow up Interview: .................................................................448

   3.  Children’s Follow up Interview: ............................................................450

APPENDIX 22 - CHECKLIST ..........................................................................452
Index of Figures

Figure 1: Photographic facial expressions of emotion ................................................................. 116
Figure 2: Cartoon facial expression of emotion ........................................................................... 116
Figure 3: Clip of Robbie the Robot game ..................................................................................... 118
Figure 4: Mr. Face ....................................................................................................................... 121
Figure 5: The differences between the three children in their responses to the activities in session one ................................................................................................................. 193
Figure 6: The differences between the three children in their responses to the activities in session two ......................................................................................................................... 196
Figure 7: The differences between the three children in their responses to the activities in session three ............................................................................................................................ 200
Figure 8: The differences between the three children in their responses to the activities in session four ............................................................................................................................ 204
Figure 9: The differences between the three children in their responses to the activities in session five ........................................................................................................................................ 207
Figure 10: The differences between the three children in their responses to the activities in session six ...................................................................................................................................... 211
Figure 11: The differences between the three children in their responses to the activities in session seven ..................................................................................................................................... 216
Figure 12: The differences between the three children in their responses to the activities in session eight ..................................................................................................................................... 220
Figure 13: The differences between the three children in their responses to the activities in session nine ................................................................. 224

Figure 14: The differences between the three children in their responses to the activities in session ten ................................................................. 226

Figure 15: Freddie’s responses in all activities in the ten sessions ................................................................. 229

Figure 16: Oliver’s responses in all activities in the ten sessions ................................................................. 232

Figure 17: Jack’s responses in all activities in the ten sessions ................................................................. 235

Figure 18: Bar chart for social skills parents’ questionnaire pre- and post-test with mid-point of 30 245

Figure 19: Bar chart for the social competence parents’ questionnaire pre- and post-test with mid-point of 9 ......................................................................................................................... 246

Figure 20: Bar chart for social skills teachers’ questionnaire pre- and post-test with mid-point of 30 248

Figure 21: Bar chart for social competence teacher’s questionnaire pre- and post-test with mid-point of 9 ......................................................................................................................... 249

Figure 22: Bar chart for social skills pupils’ questionnaire pre- and post-test with mid-point of 30 . 250

Figure 23: Bar chart for the social competence pupils’ questionnaire at pre- and post-test with mid-point of 9 ......................................................................................................................... 251

Figure 24: Bar chart for total EQ pre- and post-test ......................................................................................... 253

Figure 25: Bar chart for the social competence pupil’s questionnaire pre- and post-test with mid-point of 40 ......................................................................................................................... 255

Figure 26: Bar chart for score differences of all the measures ......................................................................... 256
Figure 27: Change score in experimental group over two periods of time, pre- and post-test........... 257

Figure 28: Change of score in control group................................................................. 259
Index of Tables

Table 1: A summary of the models and theories incorporated into the sessions
Table 2: A summary of sessions using video modelling
Table 3: Children’s responses observation
Table 4: The descriptions of the four children
Table 5: Areas which needed to be changed after piloting
Table 6: Independent variables
Table 7: Dependent variables: published scales
Table 8: Study Design
Table 9: The standard scores guideline
Table 10: The composition of the children used in the pilot study of the checklist
Table 11: Demographic data of the two cases
Table 12: The composition of the children used in the pilot study of the checklist
Table 13: Coding of children’s responses in all activities
Table 14: Coding of children’s responses in all activities
Table 15: Coding of children’s responses in all activities
Table 16: Coding of children’s responses in all activities
Table 17: Coding of children’s responses in all activities
Table 18: Coding of children’s responses in all activities
Table 19: Coding of children’s responses in all activities
Table 20: Coding of children’s responses in all activities
Table 21: Coding of children’s responses in all activities
Table 22: Coding of children’s responses in all activities
Table 23: Freddie’s responses on activities in all sessions
Table 24: Oliver’s responses on activities in all sessions
Table 25: Jack’s responses on activities in all sessions
Table 26: Differences in all the assessment measure scores (means and SD) at pre-test and post-test across both the experimental and the control group
Table 27: Pre and post intervention means and standard deviations of parent, teacher, and pupil scores on the Social Skills Questionnaire; with means and SD of research sample for the Spence’s Social Skills Questionnaire
Table 28: Pre and post intervention means and standard deviations of parent,
teacher, and pupil scores on the Social Competence Questionnaire; with means and SD of research sample for the Spence’s Competence Questionnaire

Table 29: Pre and post intervention means and standard deviations of BarOn’s Emotional Inventory by control and experimental groups

Table 30: Pre and post intervention Means and Standard Deviations of Parents’ Scores on the Checklist Questionnaire by Control and Experimental Groups

Table 31: Themes for Parents’ Developmental and Medical History
Table 32: Themes for Parents’ Family Life
Table 33: Themes for Parents’ Diagnosis
Table 34: Themes for Parents’ Descriptions
Table 35: Themes for Parents’ Causes
Table 36: Themes for Parents’ Social-Emotional Interaction
Table 37: Themes for Parents’ Impact
Table 38: Themes for Parents’ Intervention
Table 39: Themes for Parents’ Services to Support Child and Family
Table 40: Themes for Teachers’ Perception
Table 41: Themes for Teachers’ Diagnosis
Table 42: Themes for Teachers’ Impact in Social/Emotional Life
Table 43: Themes for Teacher’s Intervention
Table 44: Themes for Children’s Interview Home Life
Table 45: Themes for Children’s School Life and Intervention
Table 46: Themes for Child’s Strengths and Weaknesses in Emotional/Social Understanding
Table 47: Parents’ Follow up Interview
Table 48: Teachers’ Follow up Interview
Table 49: Children’s Follow up Interview
Table 50: Oliver and Freddie’s Assessment
Table 51: Pre- and post-level quantitative and qualitative analyses for Oliver
Table 52: Pre- and post-test quantitative and qualitative data for Freddie
Acknowledgements

I would like to thank the families and their children who participated in the study for their time and cooperation. I would also like to thank my supervisors, Brahm Norwich and Hannah Anglin-Jaffe for their encouragement and support to complete the study. It was privilege to work with them. I am especially grateful for my husband Ahmad, my children Fares, Rakan and Reuf for their love and unwavering patience during writing the thesis. I am appreciative to my colleague Abeer Alharbi to her emotional support during difficult times. To my mother and my lovely sisters and brothers for their love and support. I especially pay respect to my father who left our world at the beginning of this thesis but his soul looked after me to him I say dad I finally made it. Finally, to all children with autism I hope this study and many more improve your life.
# Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASD</td>
<td>Autism spectrum disorder</td>
</tr>
<tr>
<td>NHS</td>
<td>National Health Service</td>
</tr>
<tr>
<td>NHSMN</td>
<td>National Health Service: mental health</td>
</tr>
<tr>
<td>TOM</td>
<td>Theory of mind</td>
</tr>
<tr>
<td>ABA</td>
<td>Applied behaviour analysis</td>
</tr>
<tr>
<td>NAS</td>
<td>National Austin Society</td>
</tr>
<tr>
<td>HFA</td>
<td>high-functioning autism</td>
</tr>
<tr>
<td>IQ</td>
<td>intelligence quotient</td>
</tr>
<tr>
<td>EQi; YV</td>
<td>Emotional quotient inventory: youth version</td>
</tr>
<tr>
<td>EQ</td>
<td>empathy quotient</td>
</tr>
<tr>
<td>SEN</td>
<td>special educational needs</td>
</tr>
<tr>
<td>SENCO</td>
<td>special educational needs coordinator</td>
</tr>
<tr>
<td>APA</td>
<td>American Psychiatric Association</td>
</tr>
<tr>
<td>SEAL</td>
<td>social and emotional aspect of learning</td>
</tr>
<tr>
<td>PDD</td>
<td>pervasive developmental disorder</td>
</tr>
<tr>
<td>DSMIV</td>
<td>Diagnostic and Statistical Manual of Mental Disorder, 5th edition</td>
</tr>
</tbody>
</table>
Chapter 1 - Introduction

1.1 - Introduction

Children of this century arguably have the privilege of better education and social life. Scientists and researchers spend time and effort studying new approaches and therapies to support them. Children who are less fortunate, and have difficulties in their development, experience various problems and their life may be affected. Within this category fall children with autism spectrum disorder (ASD), which includes children with high-functioning autism (HFA), or as it is widely known, Asperger’s syndrome, who are the focus of this thesis.

Autism is the most severe developmental disorder that affects the development in social, behavioural and communicational areas. Lorna Wing developed the theory of the ‘Triad of Impairments’, describing the three major defects in children with autism: social and emotional impairment, language and communication impairment and impairment in flexibility of thinking (Wing, 1981). Twenty years ago, the word ‘autism’ was rarely heard, but today it has become a well-known disorder. To date, there have been many studies to investigate the cause of the impairment and the diagnosis; the diagnosis itself is a complicated matter, as there appears to be on-going controversy as to what criteria to include and to what degree they should be considered (Cotugano, 2009). The fields of education and psychology contribute much in evaluating various intervention programmes that are aimed to improve these impairments. This, as well, has its own difficulties, in finding the best way to help children with autism. The most significant delay in autism spectrum disorder is the social and communication impairment. Wing suggested that the ideal way to support individuals with autism is to:

“recognise the social impairment, examine it and treat any identifiable under-laying cause or associated conditions, assess specific skills and disabilities and overall level of intelligent then use this information to plan an individual plan.” (Wing, 1991, cited from Cotugano, 2009).
1.2 - Rationale and personal interest of the study

There has been a link established between the children’s delay in understanding emotions and its effect on social interaction (Bauminger & Kasari, 2000). Various studies have investigated the area of social and emotional impairment, with emphasis on social training, and using different approaches. Studies have considered peer meditation activities (e.g., Kamps et al., 2002), practising understanding the mental state of others, including beliefs, intentions and emotions, as well as other approaches (e.g., Hadwin et al., 1997 & Baron-Cohen, 2002). However, few studies have focused on social and emotional cognitive abilities in which teaching to comprehend an emotion is the target (Bauminger, 2002; Hadwin et al., 1996). Most of these studies emphasise teaching emotions through repetitive tasks where success at the task in the clinical setting is the aim (Downs and Smith, 2004; Begeer et al., 2006). Other studies implement a social-emotional cognitive method with low-functioning autism and usually focus on teaching only simple emotions (e.g., Ozonoff & Miller, 1995; Hadwin et al., 1996).

Children with classic autism who have lower intellectual functioning attend schools specially designed for them or a day unit that is attached to a mainstream school - taking on an approach (or more than one) such as the TEACCH programme to respond to the needs of the children using the best available methods(Jordan et al, 1998). At the other end of the spectrum are the children who attend mainstream schools and are included in the ‘normal’ teaching process. The DfES’s (2001) Good Practice Guidance considers the needs of children in mainstream settings such as the SEN Code of practice. It requires that these children be assessed to define their specific needs, and be supported with additional help to meet their full potential. There have been debates on how much support children with special needs receive, and questions as to whether or not the policy has been practised to its full extent (DfES, 2001 and Wilkinson and Twist, 2010). Other studies studied parents’ views to investigate their satisfaction of the support available to their children (Batten and Daly, 2006).
I have close experience with children and adolescents with autism. The first step was undertaking a training programme, in the Autism Centre in West Virginia (USA), which was part of my Master’s degree. Then, I continued educating myself, and reading many studies in the field and finally decided to do my PhD in autism. In the process of writing the thesis proposal, a close family member was taking his first steps in his diagnosis with Asperger’s syndrome. While adjusting to this news and going through the normal acceptance stage, I had to take care of my younger teenage brother who was suffering from depression and severe learning difficulties, as a result of the neglect of his needs and a lack of assessment in his country. After a long assessment process, he was diagnosed with autism. From personal experience, the lack of intervention programmes aimed at enhancing social and emotional understanding and social interaction in mainstream schools was observed.

Regardless of the growing speed of diagnosing children with autism, the public still has limited information about ASD. In the UK, it is estimated that about 1 in 100 children are diagnosed with autism (Baird, 2006). The lack of information about autism adds more stress on parents of children who may seem impolite or not well-raised. This lack of information amongst parents or school teachers may mean autism is not identified early enough to provide early intervention. The significant impact of early intervention on children and their families has become clear; it improves the development of the child, and his/her functioning at school, with family and in the long term in the society. In addition, early intervention results in many cases needing less special education support or other services (McGorry et al, 2008).

The government in England issued a proposal in 2011, which presented a new vision of special educational needs, in order to respond to the problems that face parents and their children (DFE, 2011). This vision was set in the Green Paper and proposes the following important approaches:

- supports better life outcomes for young people;
- gives parents more confidence by giving them control;
- transfers power to front-line professionals and to local communities.
Each of the above was planned to be achieved using different approaches, such as helping professionals to identify problems as they emerge. These approaches were piloted, and a new detailed plan was issued in May 2012. The current study comes in line with the Green Paper vision, in that it will address the problems children with high-functioning autism must face, using different assessment methods; and that the outcomes might be an attempt to aid the children’s needs and provide support for their parents.

In this respect, the present researcher designed an intervention programme that aimed to teach children with high-functioning autism the cognitive abilities to understand how emotions relate to their social contexts, and assess its impact on the children’s social competence.

1.3 - General aims and design of the study

The current study aimed to assess the efficacy of an intervention programme designed for children with high-functioning autism to practice understanding all aspects of emotions, including recognising simple and complex emotions, expression of emotions, coping with one’s negative emotions and empathetic responses to others. The intervention programme was designed using a multi-model approach, where different types of intervention combine to teach the children the programme, taking into account the fundamental features of autism. It was aimed at teaching them the principles of emotional understanding, such as focusing on facial features, vocal tone, body language and social situations using a wide range of training techniques and activities. The researcher believed that teaching children with high-functioning autism the principles of social-emotional understanding using multi-approach methods could be related to all social settings relevant to the child. Another teaching approach which was adopted was to link the children’s learning to real-life situations, and thereby help them to relate to their emotions better. This was also done through acting and role play, computer-based intervention that uses real faces, recognising emotions through both cartoons and-
real human faces, and other activities that are explained elsewhere in this chapter. To design an intervention based on these principles below:

- Teaching children with HFA to understand the meaning of emotions and to recognise them both in themselves and others;
- To link the concept of emotions and social situations that could cause them;
- To understand that recognising emotions requires appropriate responses;
- Measuring the impact of social-emotional understanding on social skills and interaction.

In summary the aims of the current study are:

- To design an intervention programme that is based on the above mentioned principles;
- To evaluate the outcomes of programme on the children’s level of emotional understanding and their social skills and intersection;
- To examine the background and experiences of those involved in the intervention with two children.

Two types of evaluative studies were conducted to investigate these aims. One was a quasi-experimental study benefiting from the use of a control group, where assessments were conducted before the intervention then compared with those afterwards. If a change is seen in the experimental group, but not in the control group without the effect of any other variables then it could be concluded that the change is a result of the intervention programme. The second study was a detailed case study analysis to gain more knowledge about the difficulties children with high-functioning autism experience, as well as ascertaining the views of their parents and teachers. The case study also highlighted the effect of the intervention programme in specific social skills and emotional understanding areas.

Six children with high-functioning autism were selected to participate in the intervention programme and then divided into two equal groups. Both groups were assessed on their level of social skills, social competence with peers, social-emotional understanding and their emotional intelligence. The experimental group received the intervention programme, while the control group did not. After the intervention, the same skills were tested in both groups and compared. After analysing the data, the
control group received the same intervention programme. Using the mixed-methodology design gave results that complemented each other. Collecting data from different perspectives, as well as using different methods, is a widespread approach that is frequently used in the social sciences (Cohen et al., 2006; Tashakkori & Teddie, 2003). The study contained qualitative data and quantitative data collected from the children in the sample, their teachers and their parents.

1.4 - Structure of chapters

The study consists of seven chapters. In this introductory chapter one the general topic of autism and its wider context are presented, along with a rationale and the personal interest of the study, and a general framework of the study design and its aims. Chapter two reviews the history of autism, the diagnosis criteria and classification, areas of impairment, theories and treatment approaches, special education provision and policy, along with the relevant body of literature that has focused on emotional understanding and social intervention. Chapter two also includes the key questions and hypotheses. Chapter three explains and justifies the basis for the development of the intervention programme with its aims and objectives, methods and materials, principles of teaching, along with programme procedures. The second part of this chapter outlines the programme sessions alongside detailed objectives of each session and its procedures. The following chapter four contains the methodology of the study. It includes the design for the first (experimental) study, and the second (case) study, along with qualitative and quantitative analysis and ethical procedures. Chapter five is the evaluation of the intervention programme in its two parts. The first part covers the process of the programme; the progress of the sessions and the observations of the children’s progress during the sessions. The second part is about change in the children’s measured social and emotional functioning. Chapter six contains the case study analysis which includes details of data recording and qualitative data tables of the case study analysis, followed by a cross-case analysis. The final chapter - chapter seven evaluates the findings of the experimental study with its strengths and limitations,
followed by the findings of the case study with its strengths and limitations. This chapter is then concluded by a discussion of the study’s contribution and a general evaluation.
Chapter 2 - Literature review

2.1 Introduction

The focus in this study is on children with high-functioning autism. It assessed the effectiveness of a newly-developed emotional understanding training programme on the facilitation of social-emotional understanding and promoting social interaction with adults and children. In this chapter, the available relevant literature pertaining to the study is reviewed and is organised into three sections. Section 1 (a history of autism) defines autism and other autism spectrum disorders, notes the differences between Asperger’s syndrome and autism, discusses how the diagnosis is made, the area of impairment, the theories about the causes of autism, the treatments used along with psycho-educational approaches to autism, intervention approaches, and impairments of children with Asperger’s syndrome on their social-emotional understanding. Section 2 includes a review of the literature of previous intervention strategies, their outcomes, and limitations. Section 3 contains a discussion of the aims and objectives, and the theoretical orientation of the current study.

2.2 History of autism

Up until 30 years ago, autism was thought to be a rare childhood disorder that affected intellectual abilities of the child. These disabilities were coupled with a lack of social awareness, and the inability to communicate with language (Lord and Bishop, 2010). Today autism spectrum disorder - ASD - is defined as a set of common developmental disorders that affect, according to Lord and Bishop (2010), approximately 1 in every 110 children in the United States and 1 in every 116 children in the United Kingdom (UK). Kanner (1943) was the first person to recognise some of the signs of autism. His early work became the focus of additional research in the 1960s and 70s. ASD is now the term used to cover a number of disorders. According to the Diagnostic Statistical Manual - Revised Edition (American Psychiatric Association, 2000) and the International Classification of Disease-10 (ICD-10, World Health Organization, 1993), Pervasive Developmental Disorder (PDD) includes autistic...
disorders, Asperger’s syndrome, and PDD - Not Otherwise Specified. The subtypes are differentiated by age, severity of disorder, the number of symptoms, and an association, or lack of it, between language delay and intellectual disability (Lord and Bishop, 2010).

Researchers have noted that there are different genetic patterns that may likely contribute to autism. Those genetic disorders include Fragile X syndrome, Tuberous Sclerosis and Rett syndrome (Gilberg and Coleman, 1992). However, these genetic patterns only are responsible for 2 per cent of children with ASD. The diagnostic difference for ASD, as compared to other neurodevelopmental and psychiatric disorders, is noticeable in the way a child responds to treatment, how the child develops from early years into adulthood, and associations with particular behavioural phenotypes in parents and siblings (Lord and Corsello, 2005). Thus, research on autism has continued to support the belief that as a group, children with ASD are characterised by symptoms that set them apart from other diagnostic groups.

The Mayo Clinic (2011) defined *autism* as a group of serious developmental problems called autism spectrum disorders (ASDs) that are usually noticeable by early childhood (i.e., the age of 3). The symptoms, according to the Mayo clinic, impact upon a child’s ability to socialise with others. Autism is defined by the Autism Society of America (ASA, 2009) as “*a complex developmental disability that typically appears during the first three years of life, and is the result of a neurological disorder that affects the normal functioning of the brain, impacting on development in the areas of social interaction and communication skills*” (p.3). According to the National Autism Society there are three main areas of difficulties, called “the triad of impairment”. They are: social communication difficulties; social interaction difficulties; and lack of imagination (NAS, 2011). People with autism experience certain difficulties but the effects of the condition differ. It is a lifelong difficulty that is referred to as a “spectrum”. A child with ASD is usually diagnosed by the age of 3; the delay in diagnosis occurs because the symptoms can at first be subtle (Autism Society of America, 2011). The diagnosis is often given as ASD when the child appears to be indifferent to affection and physical contact. Eventually the autistic child does develop an attachment to parents or caregivers. Speech is
late and slow in developing, abnormal in sound, or the child does not develop language at all (Autism Society of America, 2011). Children with autism may also be particularly sensitive to sounds, may not react to pain, and may fail to recognise danger. These children often want to have an environment where change does not occur. Often the child displays rhythmic body movements, such as rocking or hand-clapping (Autism Society of America, 2011).

Autism, as a term, was first introduced by Eugen Bleuler, a psychiatrist, in 1911, to explain the symptoms of social withdrawal - which at the time was a key diagnostic symptom of schizophrenia (Lord and Bishop, 2010). The word autism is derived from the Greek word - *autos* - which means ‘self’. Bleuler noted that some of his patients showed detachment from the world around them (Lord and Bishop, 2010). It was not until the 1940s that an American and an Austrian doctor discovered the term in literature, and found that it accurately described some of their patients (Frith, 2003, NAS, 2010, Lord and Bishop, 2010).

Kanner (1942) identified 11 children he was treating as suffering from childhood schizophrenia. These children were first described as schizophrenic, but later he changed their diagnosis to *infantile autism* in order to explain these children’s condition. He described the group he was studying with ‘autistic aloneness, desire of sameness, a good rote memory, language without communication, and islets of ability’ (Kanner, 1942, p. 23). Today, these characteristics are still considered to hold in all cases of autism with variation in level, as well as additional problems. Kanner reported the children to have a lack of social awareness from birth, or shortly after. He also argued that these children sometimes engaged in certain cognitive subtests and might do well, and because of that, Kanner argued that some of these children had good intellectual potential. In 1944, Asperger reported that some of the children he was treating at his child psychiatry clinic were suffering from a personality disorder. Asperger found these children to be socially withdrawn, and both language- and cognitively-delayed. He used the term autism, and believed it captured what he was seeing and treating at his clinic. Asperger (with his identification of autism) was one of the first people to document this diagnosis. Both Kanner and Asperger saw that schizophrenia could not possibly be an accurate
diagnosis because unlike schizophrenics, autistic children did not demonstrate a disintegration of their personality, and hallucinations (Frith, 2003, NAS, 2010, Lord and Bishop, 2010).

Both Kanner and Asperger suggested that autistic children had poor social interactions and failed to communicate. The difference between the two descriptions was that Kanner described children with severe impairments of language while Asperger described more able children. Most researchers argued that Asperger’s and Kenner’s autism were the same syndrome.

In 1979, Gould and Wing reported that autism was a disability that really existed on a continuum. Some autistic children were severely limited by their disabilities while other autistic children were only slightly disabled by the syndrome. Gould and Wing (1979) compared a group of children who were socially impaired to children who had equally severe learning difficulties, but without social impairment. Gould and Wing noted three areas of impairment: (a) ‘autistic aloofness’ to ‘active but odd’; (b) impaired language and communication - verbal and non-verbal; (c) rigidity of thoughts and behaviour, and poor social imagination. This has become the triad of impairment in autism that shapes the diagnostic criteria.

By 1981, Wing had coined the phrase Asperger’s syndrome in a research paper, to identify a subgroup of autistic patients that she had been examining (Wing, 1981). The phrase includes able people with autism who do not fit Kanner’s stereotype of being “silent and aloof”. She listed six diagnostic criteria that are based on Asperger’s:

- Speech - no delay but content often odd, pedantic and stereotyped;
- Non-verbal communication - little facial expression, monotonal voice and inappropriate gestures;
- Social interactions - not reciprocal, lacking empathy;
- Resistant to change and enjoys repetitive activities;
- Motor coordination - gait and posture odd, clumsy;
- Skills and interests - good rote memory, circumscribed special interests.
Asperger’s syndrome became widely accepted in the English-speaking world, and today most parents are happier to receive a diagnosis of Asperger’s syndrome because parents hate the term autism - they think it carries with it a social stigma. This social stigma is not attached to the label Asperger’s syndrome, which is apparently comforting to some people (Lord and Bishop, 2010).

According to Attwood (2004), a debate has occurred in the academic literature and between clinicians as to whether Asperger’s syndrome is a separate disorder with a profile of special abilities that is not found in any other syndrome, or whether it is just another form of autism marked with a higher intelligence quotient. Hans Asperger originally described the condition named after him (Attwood, 2004). In general, clinicians view Asperger’s as a part of the group of disorders known as Pervasive Developmental Disorders or Autistic Spectrum Disorders. The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 2000) reported that Asperger’s syndrome could be differentiated from autism in two ways: (a) by examining the child’s early development, and (b) the existence of some characteristics that are rarely seen in children with autism. Early language and cognitive skills are not significantly delayed in children with Asperger’s, and they are less likely to exhibit the same obsession with the parts of objects that is seen in an autistic child. Additionally, children with autism self-isolate, or use rigid social approaches, while children with Asperger’s can be motivated to socialise, although it is usually one-sided, highly eccentric, verbose and done in an insensitive manner (Atwood, 2004). Many children with Asperger’s spend much time collecting facts and information.

2.3 - Diagnostic criteria and areas of impairment

Rutter (1978) made the first official attempt to define autism. He argued that there were four characteristics that were needed in order to make a diagnosis of autism. These characteristics were: (a) onset before the age of 30 months; (b) impaired social development (c) impaired communicative development that is not the result of other cognitive delay; and (d) the presence of unusual behaviour, included under the concept of ‘resistance to change’. 
The Diagnostic and Statistical Manual (DSM) of the American Psychiatric Association contains the most recent scheme of diagnosis. According to the DSM-IV-TR (2000), to receive a diagnosis of autism, a child has to have six symptoms from three core categories: (a) qualitative impairment in social interactions (e.g., marked impairment in the use of multiple non-verbal behaviour - such as eye-to-eye gaze, facial expression, body posture, failure to develop peer relationships, lack of social or emotional reciprocity); (b) qualitative impairments in communication (e.g., delay or lack of verbal language, marked impairment in the ability to initiate or sustain conversation, stereotyped and repetitive language or idiosyncratic language); and (c) restricted and repetitive patterns of behaviour, interests, and activities (e.g., restricted patterns of interest, inflexible adherence to a specific routine or stereotyped and repetitive motor mannerisms, preoccupation with parts of objects). At least two of those symptoms must be from the social domain while one is required in each of the other two domains - language and repetitive behaviour. Autism, sometimes referred to as “classical autism”, is the most clearly defined of the ASDs (Volkmar et al., 2005).

Children with autism are generally found to have difficulties in social interaction, problems with verbal and non-verbal communication, and a lack of imaginative skills that lead to repetitive behaviour. Some children with milder forms of autism have only slight delays in language, but have greater challenges with social interaction. They may have difficulty in initiating, and/or maintaining a conversation. Their communication is often described as “talking at others instead of to them”, and they have difficulties in initiating or maintaining an interaction (The National Autistic Society, 2007).

Not all children diagnosed with autism have the same level of disability. In Asperger’s syndrome, children are more likely to function on a higher level.

The criteria for a diagnosis of Asperger’s disorder are similar to those for autism. To be diagnosed with Asperger’s syndrome, one must have at least two impairments in the social interaction area and one in the area of restricted, repetitive, and stereotyped patterns of behaviour, except that no overall delay in language skills, cognitive development, self-help skills or adaptive behaviour is evident (APA, 2000). According to Volkmar et al (2005), though overall delays are not evident, individuals
diagnosed with Asperger’s syndrome often have idiosyncratic and peculiar language characteristics, as well as uneven cognitive profiles with a large portion displaying symptoms consistent with a non-verbal learning disorder, that is, strengths in verbally-mediated skills (e.g., vocabulary, knowledge, verbal memory and output), and deficits in non-verbal skills (e.g., visual problem-solving, visual motor coordination and body language). The difference between autism and Asperger’s syndrome is that the latter appears in children at a later age. Parents could notice the symptoms of autism by the age of two; most abnormalities in developmental milestones are recognised by 80-90 per cent of parents (Volkmar et al., 2005). Parents start by noticing the slow speech and repetitive behaviour. Loss of language skills, decreased interest in activities and social interactions may also prompt parents to seek advice, as approximately 25-45 per cent of children with autism regress after initially developing language and social interaction skills (Chawarska and Volkmar, 2005). By the fourth birthday, children with autism typically display a number of impairments in social interaction (e.g., abnormal eye contact, limited interest in other children, limited social smile, limited range of facial expressions) and communication (e.g., poor response to name, failure to respond to gestures, use of others’ bodies as a tool), as well as stereotypical behaviours and repetitive patterns (e.g., inappropriate use of objects, repetitive interests/play, unusual sensory behaviour).

Another important diagnostic category is Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS). It is a sub-category, meaning individuals display some characteristics but do not meet all the criteria for autism or Asperger’s syndrome. A PDD-NOS is given when an individual displays a severe impairment in his or her ability to socially interact using either verbal or non-verbal communication skills, or when there is the presence of stereotyped behaviour, interests, and activities (APA, 2000). An individual diagnosed with PDD-NOS may exhibit behaviour very similar to individuals diagnosed with autism or Asperger’s syndrome, but not to the extent that he/she meets all of the criteria for one of those disorders (Volkmar and Klin, 2005).

There are also other common features observed in individuals with ASDs that are not necessarily required for the diagnosis. They are hyposensitivity - being under-sensitive to stimuli and having
trouble processing information - and hypersensitivity - being over-sensitive to certain stimuli such as sound, smell, touch or taste (Frith, 2003). An important factor that is not analysed in the diagnostic criteria is a high intellectual ability of people with autism. Howlin (1997) evaluates the non-verbal Wechsler scale in people with autism. The result presents a pattern of high rate than the comprehension test. Children’s low performance on the comprehension sub-test is often because this test relies on incidental learning from the social culture. As reviewed above, children with ASD have difficulties in such areas. Yet children could show a wide variability of intellectual functioning skills in topics that are particular interests (Myles and Simpson 2002). In addition, individuals diagnosed with an ASD often have deficits in their motor skills and coordination, and are described as having “odd posture” and clumsiness (Attwood, 1998; Howlin, 1997).

Approximately 70 per cent of children on the spectrum also have mild-to-moderate cognitive impairment (Fombonne, 2005) which often affects adaptive behaviour (e.g., self-care, safety). These are related to cognitive functioning and severity of ASD symptoms (Loveland and Tunali-Kotoski, 2005).

Verbal language is another criterion that is included in diagnosis. Children with ASDs show more severe receptive language difficulties than typically-developing children, as well as children with language disorders (Paul, 2005). The verbal sub-tests on the Wechsler scales aid in identifying functional deficits in language among children on the spectrum. Volkmar et al (2005) recommended that a profile of assets and deficits for the individual child should be developed based on multiple instruments with the results of the assessment interpreted, based on multiple lines of converging evidence.

The term high-functioning autism describes individuals who have many or all of the symptoms of autism, but who did not develop language at a typical rate (Autism Society of America, 2011). This is helpful for placing a child within school and getting the appropriate diagnosis that can help guide appropriate treatment and school placement (Autism Society of America, 2011). The child’s diagnosis needs to be placed in the child’s records, as it may lead to medical, educational and social benefits.
Another sub-group of the spectrum is Rett’s disorder. It is rather similar to autism, but exclusively affects females. The children begin to develop on target, but then lose some communication abilities, with symptoms of Rett are beginning between the ages of 1 and 4 (Autism Society of America, 2011). Gradually, the child’s mental and social development regresses until the child does not respond to people anymore, even family members. The symptoms include pulling away from social contact, talking stops, fidgeting due to inability to control hands and feet (Lord and Bishop, 2010).

2.3.1 - Argument for the necessity of diagnosis

From the above explanation of the diagnostic criteria, it is clear that there are core features which a person must show to receive a diagnosis, and non-core features that a person may or may not show. However practitioners cannot ignore these other features and they should be considered when defining the nature of autism.

On the other hand it has been argued that diagnosis in education is a discriminatory act (Armstrong, 2010) as it identifies the person according to his/her disorder, rather than differences. Over the last 60 years, professionals have studied the neurological differences in human beings, considering that there is a standard brain function and deviations from it. There becomes the need to specify and label individuals who do not match the normal neurodevelopment with terms such as autism, Asperger’s syndrome, etc. According to the biological approach, if autism is a disorder then there should be a cure, but the reality is that biological researchers are a long way from finding a cure while educational research remains the best treatment available to deal with the various difficulties associated with autism. The neurodiversity approach wants people to celebrate being different through pointing to the positives, such as strengths and talents. The term ‘neurodiversity’ was developed by adults with autism in opposition to the pathological model. According to them, ASD is not a disorder but rather the brain simply functions differently; this means that the society should accept them, have a better understanding of their behaviour, and help them without trying to change who they are. (www.neurodiversity.com).
Jordan (1999) argued the importance of a definition for practical purposes. She emphasised the need in terms of defining the special needs of individuals for educational placement, teaching approaches or adult care. Because of the wide-ranging difficulties that individuals with ASD may experience, professionals need to use a variety of labels for someone classified as being on the spectrum, such as Asperger’s syndrome, atypical autism etc. For example, in school, knowing if some has autism and to what degree, will aid teachers in knowing how to teach that person.

For the purpose of this study it is essential to determine the differences between high-functioning autism and Asperger’s syndrome. Gillberg and Ehlers (1998) identified four main areas where controversy over the difference in diagnosis of high-functioning autism and Asperger’s syndrome still exists:

- **Level of cognitive functioning.** The description of Asperger’s syndrome as autism without any additional learning disability is easily distinguished at the level of cognitive functioning. Asperger noted that there is a strong possibility that a person could be diagnosed with Asperger’s syndrome and that other learning disabilities be present as well. In fact, high-functioning autism is not possible in individuals who have an IQ below 65-70 (Baron-Cohen, 2000).

- **Asperger’s syndrome mostly occurs when there are difficulties with motor skills.** Asperger included the word “clumsiness” describing a group of children. The controversy in this is that there are many children with high-functioning autism who also experience certain difficulties in these areas (Volkmar et al., 2005).

- **Language development is the area that occupies the centre of this controversy.** Both the ICD10 (World Health Organization, 1993) and the DSM IV (2000) stated that those diagnosed with Asperger’s syndrome have normal verbal language development, while children diagnosed with high-functioning autism may have a significant language delay. However, Asperger’s was originally described as a condition that had speech and language peculiarities, which were considered prime factors in diagnosing a child with Asperger’s disorder.

- **Age.** Because autism as a disorder can change over time, it is possible that a child’s diagnosis can change as well. Thus, a diagnosis of HFA and one of AS can be made in the same individual at different stages of development. There are also cases where a child has been diagnosed with high-functioning autism in early childhood and then that diagnosis may be changed when the child is evaluated at school. It is possible that the child could be declared to
have Asperger’s syndrome instead. Many medical professionals believe that children cannot be diagnosed as having Asperger’s syndrome until the child has entered school where he/she will be in social settings that would reveal any particular deficits that the child might have (NIMH, 2011).

The National Autism Society in the UK reported that there are some important similarities and differences between Asperger’s syndrome and high-functioning autism. For one, both conditions are similar in that the people diagnosed (with either of the two) have certain impairments. Even though individuals with high-functioning autism or Asperger’s syndrome have their own special skills and abilities, there is still a need to focus on the deficiencies or problems that they also face. Both groups are likely to be of average and above-average intelligence as well. However, people with these disorders are often diagnosed after the age of onset and the extent of their motor skill deficit has been determined. Despite their differences, both diagnoses are treated in similar ways, because the ways in which both of the conditions present themselves are largely the same. That is why the treatments, therapies and educational approaches to these two conditions are also largely the same (NAS, 2011).

In this present study, all children included do not have additional learning difficulties and have a typical language development. The researcher did not investigate if the children’s speech development was typical as a toddler, but the diagnoses and the initial meetings with the children indicate that there is no significant delay in their language. The diagnostic guidelines in UK do not repeat diagnosis for children who have been diagnosed with any type of autism, without any obvious change in the child’s condition. Therefore, some children who are diagnosed with HFA could miss out on the change to Asperger’s syndrome. For the purpose of this research, the researcher chose the high-functioning autism definition. It will include children who are diagnosed with Asperger’s syndrome or high-functioning autism.

2.3.2 - Causes of Autism
While the cause of autism is not clear, scientists believe that both genetics and the environment play a role (National Institute of Mental Health [NIMH], 2011). Researchers have been able to identify a number of genes associated with the disorder; they have also seen that in some children with autism that there are several regions in the brain with irregularities. Other researchers have discovered in their studies that people with ASD have abnormal levels of serotonin or other neurotransmitters in the brain (NIMH, 2011). These abnormalities suggest that ASD could be caused by the disruption of normal brain development early in foetal development, that can be caused by defects in genes that control brain growth and regulate how brain cells communicate with each other. These miscommunications between cells may be due to the influence of environmental factors on gene function (NIMH, 2011). Researchers have proven that parental practices are not responsible for the development of ASD (Jordan, 1999).

Studies on twins have suggested that there are some people who have a predisposition to autism (NIMH, 2011). Studies have shown that if one twin has autism, there is a 90 per cent chance that the other twin will also be diagnosed. According to the NIMH (2011), presently research is being focused on determining the specific genetic factors associated with the development of ASD. The risk of a family having a second child with autism is approximately 5 per cent, which is greater than the risk for the general population (NIMH, 2011). In some children with autism it has been shown that their parents may show mild impairments in social and communicative skills, or engage in repetitive behaviour. Research has also shown that some emotional disorders, for example bipolar disorder, occur more frequently in the families of people with ASD. The most important advance in changing our understanding of the cause of autism was the discovery that genetic factors have a key role. In 1977, Folstein and Rutter published a study in twin with autism and “showed that the concordance rate in identical twins was very much higher than in non-identical twins. This finding has now been replicated several times and is well established. But the genetics of the disorder must be complex, as the mode of transmission does not follow any recognisable pattern”.

35
The NIMH (2011) argued for a link between autism and vaccines. It suggests that the Mumps-Measles-Rubella (MMR) vaccine may cause gastric problems that could lead to the development of autism. It also explains the link that a mercury-based preservative called thimerosal, used in some vaccines, could be connected to autism. However, Sircus (2011) discussed that the medical researches stated that the cause of autism is not “entirely” known, but they still definitively stated that vaccines are not the cause. However, the genetic cause could be explained in other views. When autism runs in families, what is also running in those same families are common environmental conditions. The very fact that many parents notice regressions and deteriorations in their children after receiving multiple vaccinations (intense mercury contamination exceeding EPA guidelines) is a key point that is often ignored and points to vaccines as a key triggering event in an already weakened child (Sircus, 2011).

The medical profession refuses to believe that vaccines are responsible for the rise in autism, but some people remain unconvinced because there are no definitive causes. Sircus (2011), and professionals like him, noted that vaccines are an important protection for children, but suggest that more studies need to be conducted to try and determine what factors are definitively responsible for autism.

2.3.3 - Incidence of autism

Prevalence of autism varies from country to country, due to various variables. One is the difference in diagnostic criteria (while some countries include children with high-functioning autism in the total prevalence, some countries do not include them as a sub-group). Another factor is the knowledge of autism as a disorder. Recent estimates of the prevalence of autism spectrum disorders (ASD), among children aged 8 years, suggest that 6.7 out of 1000 children are affected (Centres for Disease Control, 2007) while estimates for current incidence of autism reach as many as 1 per 200 children (Wing, and Porter, 2002). Another factor is the screening used in estimating the total prevalence. In a study carried out by Baird and colleagues the estimation rate was 38.9 in 10000, for childhood autism, and
77.2 in 10,000 for the other autism spectrum disorders. The researchers indicated that children with Asperger’s syndrome might not be included due to the criteria. If the children do not have a statement, then they could be missed (Baird, 2006). The recent prevalence in the UK is around 1 in 100 in children, however there is not a prevalence study for adults.

In either case, the increased number of children and adults diagnosed with autism over the last 20 years is noticeable. This led researchers to argue the possible causes of the increased rate of autism. The debate was whether it is down to environmental factors, improvement of the diagnostic criteria, or generally increased public awareness.

According to Fombonne (2005), the prevalence of autism that is occurring in society today may be due to changes in the method of diagnosis. In a review of worldwide prevalence studies conducted between 1966 and 2004, Fombonne examined the frequency of the diagnosis of autism from “epidemiological” surveys. In the same study, boys were consistently identified as having autism more frequently than girls. The mean male to female ratio was 4:1 across studies reviewed by Fombonne (2009). In terms of cognitive functioning, he also reported the median proportion of children with autism also categorised as having severe-to-profound mental retardation was 38.5%, the proportion with mild-to-moderate impairment was 29.3%, and the proportion without cognitive impairment was 29.6%. Thus, approximately 70% of children with autism have some degree of cognitive impairment.

Utilising diverse methods of assessment (e.g., medical examination, parental report), the median rate of at least one medical disorder associated with autism was 5.5 across 16 studies. Three medical disorders frequently associated with autism include epilepsy, Down syndrome, and Fragile X (Fombonne, 2009). Fombonne’s 30-year prevalence study review indicated that autism has increased worldwide to between 10/10,000 and 16/10,000. Fombonne found that the increase in ASD prevalence rates occurred because knowledge of the disorder has increased and the way autism is defined has been refined. It is explained by changes in definitions, diagnostic assessment instruments,
service availability, and general awareness of ASD symptoms among the general public and professionals (Fombonne, 2009).

2.3.4 - Autism approaches and interventions

2.3.4.1 - Legislations and inclusion

Every year, new legislation is established in different countries to enforce the rights for special educational needs and inclusion. For example, the Individuals with Disabilities’ Education Act (IDEA) is a piece of legislation that was enacted to ensure appropriate education for children with special needs in the USA. The latest revision of this act included children with autism in the policy (IDEA, PL101-476, Sec. 612 (5)(B)). In the UK, there is also legislation supplemented by the SEN Code of Practice relevant to children with autism, as individuals who need special education support to meet their needs (media.education.gov.uk, 2011). The approach for educating children with autism is to move away from a focus only on difficulties and focus on positive aspects, and to establish strategies that include children with special needs in a ‘normal’ educational setting (Wilkinson, 2010). Children diagnosed with high-functioning autism or Asperger’s syndrome usually attend a mainstream school (Attwood, 1987; Frith, 2003). The term, mainstreaming, means that children are returned to a regular classroom from special education classrooms, while inclusion means that the needs of special children will be met within a regular classroom setting, and not by segregating them into a special education setting. Despite the differences between the two terms, the overriding goal is to place the child in the least restrictive learning environment (LRE). LRE is a term used in the US that means that a student who has a disability should have the opportunity to be educated with non-disabled peers, to the greatest degree of support available (Power-deFur, and Orelove, 1997). In order to achieve the inclusion approach, one must consider the following: classroom size and setting, staff training, early intervention, and type of special services offered (Wilkinson, 2010).

The success of the inclusion also depends largely on the introduction of various curriculum modifications and the support system within the classroom. There have been arguments for including children with learning difficulties and disabilities in ordinary schools. The major debate surrounds
the question: what is the most ‘normal’ environment? There is an argument that no one setting suits every child (McGorry et al, 2008). Another argument is, from an economic point of view, about using existing resources to reduce the overall cost of special needs. Research that has supported the effectiveness of inclusion varies according to the population studied and the nature of the variables examined. In a recent review of the effectiveness of inclusion, Lindsay concluded that empirical evidence was marginally positive and that studies drifted towards inclusion as a right rather than as an effective approach (Lindsay, 2007). According to Lindsay, inclusion is a dynamic process that depends on the interaction of all aspects in the school. The success of inclusion depends on school environment particularly teacher’s attitude. It has also been argued that: “inclusion without resources, without support, without teacher preparation time, without commitment, without a vision statement, without restructuring, without staff development, won’t work” (O’Neil, 1994: p.161).

To investigate inclusion further, Ravet (2009) divided the different perspectives into a ‘rights-based’ position that supports the inclusion of ASD children in the mainstream schools and a ‘needs-based’ position that question the lack of evidence-based research and negative outcomes of inclusion. These different perspectives in the educational environment do not serve the children and act as a barrier for teachers to understand the children’s needs. Whether we see children with autism as unique, or as children who share the same behaviours with other children, it is essential to provide teaching techniques that meet the needs of autism - such as using visual learning and understanding emotions (Ravet, 2009). The recent generation of inclusion studies focuses on catering to the individual needs of each child with autism, rather than providing an overall inclusive programme. The educational environment should fulfill each child’s needs and support them so that they feel included (Wilkinson, 2010; Ravet, 2009).

Whilst there is not one treatment for children with autism, countless approaches have been proven to overcome the challenges that children and their families face.
To summarise the approaches that are widely used, the researcher divided them into two sections, medical and non-medical approaches.

Non-medical approaches

Treatments of these approaches have been developed to address all social, verbal and non-verbal forms of communication, as well as sensory and behavioural difficulties. These programmes are effective when used as early as possible in an intensive manner. Below is description of the most-commonly used.

1. Applied Behaviour Analysis

Applied Behaviour Analysis (ABA) as a teaching method was developed by Lovaas as a therapeutic approach for children with autism and other severe learning difficulties. This intervention is based on the notion that human behaviour is learnt and children can learn new skills through modification of stimuli, if presented with direct reinforcement (Smith and Eikeseth, 2011). ABA approaches focus on structuring the learning environment and skill expectations. The adult (who could be a therapist, teacher or caregiver) will systematically encourage certain responses from the child and then respond in ways designed to either increase or decrease certain behaviours. It is an intensive one-to-one teaching method that requires between 30 to 40 hours per week depending on the child’s needs. Data collection prior to, during, and after the treatment is essential in order to measure progress and modify strategies. The major behavioural technique involves immediate reinforcement, consistency of reinforcement then fading of reinforcement. It incorporates interventions such as applied behaviour analysis and discrete trial learning (Smith and Eikeseth, 2011). In applied behaviour analysis, a skill is analysed and broken down into steps, which are then used as a teaching programme for the student. The discrete trial learning process presents the steps with a clear goal, and rewards are issued when the activities are completed successfully. These behavioural approaches have incorporated developments such as ‘general case programming’ in place of ‘errorless discrimination learning’. ‘Discrete trial learning’ has also been replaced with ‘ecologically valid task units’ (Jordan et al, 1998). The general case programming gives the children experience of different examples of the concept to
be learnt. On the other hand, errorless discrimination learning uses one correct example at a time, and the task is structured to maximise the chance of success. Ecologically valid task units provide terms of functional behavioural strings, instead of breaking them into small steps as in discrete trial learning. ABA also addresses skill analysis and incorporates shaping procedures that teach new skills. In this way, the behavioural techniques affect performance and help with skill acquisition. These teaching techniques - such as structured reinforcement and fading - are one of the positive successes in increasing children’s positive behaviours.

An increasing number of studies give evidence that ABA techniques used as an early intervention programme for children with autism can improve their communication, social skills, self care, and future employment chances (Smith and Eikeseth, 2011). These studies also provide evidence of increased interaction, both with families and in the community, for all age groups ranging from preschoolers to adults (Smith and Eikeseth, 2011; Gerhardt, 2013).

Jordan et al (1998) reported that ABA focuses on specific behaviours rather than addressing the diagnostic entity of autism; the main focus of ABA is on the immediate environment instead of the early history of the child. This can be seen as a disadvantage since it is based on behavioural work instead of traditional approaches. Children might learn a socially accepted behaviour, but not necessarily understand its purpose, and a child might robotically repeat the behaviour which could lead to speech patterns. Another criticism applied to ABA is that it can lead to dependency on teacher’s prompting. In my opinion, a qualified and a well trained therapist could overcome theses disadvantages. Also, when parents choose the best practice, they need to be made aware that there is not a sole approach that will aid all their children’s problems; alternatives should be always considered.

2. **TEACCH Programme**
This is the most widely used approach for teaching children in the ASD. Treatment and Education of Autistic and Related Communication Handicapped Children is community-based, and targets children and adults with autism and communication disabilities. TEACCH aims at developing communication, social and life skills among autistic children and helps them work and play independently of adults (Mesibov et al, 2004). It is a structured approach focusing on the concept of modifying the environment to the child’s needs, and not the opposite. The programme teaches several ways of communicating, such as the use of photographs, pictures, symbols, words, and objects of reference. Like ABA, TEACCH requires intensive one-to-one teaching but differ from ABA as it is less costly and often funded by public schools. The programmes assist children with autism in their childhood and provide them with support in their adulthood. The trainers focus on the strengths and interests of the students and also address the emerging skills. Part of the training involves interacting and engaging in learning activities with ‘normally-developing’ children (Mesibov et al, 2004). This interaction and reverse integration helps children with autism adjust to mainstream classes. The programme provides an environment where difficulties experienced by autistic individuals can be circumvented, in order to enable them to live and learn without unnecessary stress and anxiety. Trainers conduct an assessment that identifies emerging skills and addresses them as the first teaching goals. Students begin by learning functional skills and good work habits that enable them to function with little intervention - provided they are within the TEACCH structure (Jordan et al, 1998). Visual information, predictability and structure help the children understand what they are supposed to do, where and when it should be done, and the order of doing the activity. Parents are also involved in the programme, and their job is to promote a feeling of competence and well-being among the children. They work as co-therapists and participate in home activities when TEACCH instructors make home visits (Jordan et al, 1998). Parents also provide home training for goals such as independent play, improved communication and toilet training. They are provided with parent support information that helps them learn strategies of effective training.

The TEACCH programme has advantages, such as supporting ASD adults in the employment sector (autism org, 2009). Since autism is a lifelong condition, there are employment support models that
include individual placements, and a community placement model. Therapists provide long-term support services to individuals and employers. Children in the TEACCH programmes attend either mainstream or special schools, or remain at home with their parents, and therapists make home visits and provide advice to the teaching staff (autism org, 2009). This practicality makes the programme achievable for most children depending on their condition. The visual learning activities help the students and adults perform most activities with little support from parents or trainers. This has helped adults receiving support participate in community activities with minimal assistance from supervisors. The main disadvantage of the programme is the lack of activities addressing autism directly. The programme provides mechanisms of minimising the difficulties instead of addressing autism. Children within the programme may require other approaches to autism, but there is a likelihood of compromising the effectiveness of the programme or incorporated approaches (Jordan et al, 1998). In their report, Jordan and colleagues summarised the gap in the TEACCH syllabus as follows: despite having well matched control group in some researches such as Ozonof and Cathcart (1998, cited from Jordan et al, 1998), it was difficult to have control over other interventions the children undertake or over parents’ involvement. Another finding is the lack of comparison research of the TEACCH programme as against other programmes.

3. The SPELL approach

This programme was developed in the UK through the NAS schools for children and adults services. It stands for Structure, Positive (approaches and expectations), Empathy, Low (arousal) and Links. It is based on recognising the individual’s needs; by building on strengths and illuminating the disabling effects of autism, children’s functioning can be improved (NAS, 2006d). Programmes and schools that adopt the SPELL framework are characterised by a focus on providing children with a structured environment and consistency of learning, thus reducing any disturbance. This method takes into consideration the person with autism’s needs for organisation and a predictable environment.
The programme focuses on assuring success to increase self-esteem of individuals. The techniques used are assessment throughout the intervention and realistic methods to suit the individual’s abilities.

SPELL trains teachers and supporters to empathise with the individual with ASD through understanding their needs and relating to how they see the world. Links between children, teachers, parents and the community are a key factor to promote consistency and avoid confusion (National Autistic Society, 2006d).

Although I did not identify studies that evaluate SPELL’s effectiveness, its framework addresses autistic needs directly and sees each child’s uniqueness. It could be used alongside other approaches such as TEACCH and ABA.

4. Daily life therapy

Also known as the Higashi approach, this is based on the daily life therapy programme developed by Dr Kiyo Kitahary of Tokyo, Japan. It provides children with autism with systematic education through group dynamics, modelling, and physical activity. It aims to support the children to improve, as closely as possible, to the normal physical, social and emotional levels (Jordan et al, 1998). Similarly to TEACCH, structure and organisation are the key roles to reduce ASD children’s anxiety and aids in relating and communication with others in order to develop independency. However, the difference is that daily life therapy follows a holistic approach between the mind, body and spirit. Also, physical activities play a key role in this model to reduce anxiety and develop self-esteem. This approach is only available in a few schools - three have been identified through the research autism center: the Boston Higashi School in Randolph, Massachusetts in the USA; the Horizon School in Rugeley in the UK; and the Musashino Higashi Gakuen in Tokyo (research autism, 2012). Therefore, very limited research evidence is available for the daily life therapy approach.

5. Social Stories
This is a model developed by Carol Gray to help children with autism understand social skills and how to interact appropriately with others. Social stories techniques are used to educate and praise ASD individuals by describing a social situation, other people’s perception and the appropriate response (Gray, 1998).

This approach addresses the hypothesis that children with autism lack a “Theory of Mind,” or the ability to put oneself in the place of another and to understand their point of view (Baron-Cohen, Leslie & Frith, 1985). Social stories might then be used to explain social situations in terms of what other people are thinking and why they may behave in certain ways. The stories are presented in a reassuring manner, through descriptive words and visual aids for less able children. The guideline of writing social stories should follow a specific series of perspective, descriptive and directive sentences. The advantages of social stories are that teachers and parents can tailor them specifically for each child and address issues from the child’s perspective. Another positive point is that it can be used alongside other approaches; particularly those that do not target social skills in particular (such as ABA). Other approaches could benefit from this teaching model in managing the social difficulties that children experience. Although using social stories along with other models could be seen as advantageous, one could also argue that it is a limitation when measuring the effectiveness of social stories; they are often used in school or home settings in combination with other approaches. Therefore, researchers have found that social stories supportive researches are unreliable (Sansosti et al, 2004). Sansosti et al reviewed the available research on the effectiveness of social stories and agreed with the previous findings. On top of that, the work they reviewed did not have control over other factors when comparing social stories to other interventions. They suggested other techniques to improve its effectiveness on the targeted social skill, such as frequent reading of the same story.

6. The Sun-Rise Programme

This is a relationship-based intervention programme that is conducted at home. It focuses on building a relationship between the child and the parents based on love and acceptance. By teaching parents to see their children as a gift, both parents and teachers begin to follow the child’s leads and interests.
This finding was discovered by the parents of a child with severe autism, who then opened a centre in the USA to teach other parents their approach. The main elements of the programme surround the idea that parents create a special room and are extremely involved with their children. They begin by joining in with and imitating their child, then build from there to improve the child’s skills. The criticism of the approach is that, since it’s a home based programme, evaluating it is difficult. A study by Williams (2006) suggested that there is not enough evidence of its effectiveness and that the data collected from the longitudinal study (over the course of one year) did not fully match the literature regarding this approach.

2.3.4.3 - Medical Approaches

Medical interventions focus on the physical needs of the individual with ASD as a biomedical organism, addressing deficits or improving them by medical or chemical means. Medication and/or diet are often used to treat symptoms associated with autism, such as sleeping problems, hyperactivity, depression and gastroenteritis.

A diet and supplement approach assumes that children with autism may experience an increase in sensitivity to a range of foods. Gluten and casein are the most suspect foods that can increase autism characteristics. The Gluten- and casein-free diet claims that, by elimination of a suspect food, behaviour improvements may be seen (Knivsberg et al, 1990). The gluten- and casein-free diet is the most used by parents. The result of this open trial study by Knivsberg et al (1990), for 15 individuals with autism and aged between 6 and 22 was promising. Improvements were reported in social interaction, language and comprehension, as well as sensory motor abilities. Although the non-medical approach gained the trust of the parents, there are strong debates about the effectiveness of this approach regarding the unsuitability of all children and the lack of evidence. For instance, the gluten- and casein-free diets do not have randomised control trials from parents, therefore there is no
objective evidence (Francis, 2005). Another medical approach that is commonly used in the USA is prescribed medication.

2.3.5 - Review of studies that evaluate autism approaches and intervention

One method used to review the treatments is to investigate other researchers’ reviews of the available interventions. Jordan et al (1998), in a research report, thoroughly described all of the widespread educational approaches that were used with autism before 1998. They summarised the main approaches as the following:

a. Interactive approaches based on building relationships with teachers, parents and children as the basis for further development. They include the playschool curriculum, Infant development programme, musical interaction therapy, interactive curriculum, and option approach;

b. Approaches to communication, which include the Picture Exchange Communication System (PECS), augmentative communication and facilitated communication;

c. Integration approaches, which include learning experiences, Walden preschool programme and The Douglass Developmental Disability Centre;

d. Division TEACCH;

e. Behavioural approaches, including Lovass: Applied Behaviour Analysis (ABA).

Jordan et al’s (1998) main key findings in this review were that:

- Most of the approaches have some supporting evidence for the approach’s effectiveness from a scientific point of view but lack long-term results, follow-up measures and controlled study;

- The local education authorities emphasise searching for effectiveness approaches through comparison, in particular of Lovaas, the Higashi school at Boston and TEACCH. This is not surprising as these are the most used programmes that are based on theoretical trends, and research shows positive evidence (ibid; Howlin, 1998);

- Not all the programmes have studies of their effectiveness, especially long-term studies;
• Among the approaches based on integrating children with autism with typical development children, positive results were found with the recommendation for future studies to have more control over some of the variables;

• There are studies that measure the effectiveness, but not all are based on methodological evaluation;

Another review was done by Francis (2005) for the purpose of supporting parents and teachers keen on choosing the right intervention. Francis critically evaluated the widely used interventions favoured by parents and teachers, according to research criteria. The interventions evaluated were grouped into psycho-educational/behavioural approaches, psycho-pharmacological interventions, and the less traditional or complementary approaches. The findings showed that parents still have difficulties deciding on an appropriate intervention for their children, despite having empirical support in some approaches such as ABA. Francis’ research contained recommendations that help parents when investigating, namely: (1) the treatment has to be consistent with current understandings of ASD deficits; (2) it is important to know possible effects; (3) whether or not teachers have enough training and experience; (4) the impact of the intervention on the family regarding practicality, time and funding; (5) supporting evidence for the program’s efficiency. The review also found that parents prefer a comprehensive approach that covers all aspects of autism and, at the same time, that is individualised for each child.

2.3.5.1 - Overall findings

After reviewing the above approaches, the main outcomes can be summarised as follows:

• There is a consensus that the most effective elements for intervention are behavioural strategies and structured teaching (Howlin, 2000; Francis, 2005);

• There is integration of the philosophies used throughout all approaches. Some share the same theories or approaches, such as repeated practice, teaching in small steps, giving the child control, and positive reinforcement;
• Some research evidence relies on case studies, teachers’ or parents’ reports, and not on methodological assessments;
• Parents find it difficult to choose the right educational method due to the lack of evidence;
• An approach that is successful with one child may not necessarily be with another; cultural environments are never exactly the same, therefore some centres choose several approaches and use what is appropriate for each child.

The current study does not follow a specific approach from the above review, but rather a multi-model approach, where the purpose is to teach the children emotional/social understanding. Detailed explanation of the methods, approaches, structure and techniques is explained in Chapter 3.

2.3.6 - School placement and policies in the UK

Schools and educational authorities in the UK are responsible for developing their policies and practices towards achieving an inclusion-based educational environment. The Special Educational Needs and Disability Act (2001) required schools to make adjustments, to meet all children’s needs, and to allow all children to have access to the curriculum (Wilkinson and Twist, 2010).

The Department of Education issued the Special Education Code of Practice in 2001. The main goal is to give guidance and strategies to local authorities (LAS), educational settings, and state schools in order to identify, assess and give provision to any child with special needs (DfES 0581 2001). The code of practice adopts a graduated response approach.

“This ‘graduated response’ approach recognises that:

• there is a continuum of special educational needs;
• it is possible to bring increasingly specialist expertise to bear;
• the school should make full use of all available classroom and school resources before calling upon outside resources, and provide evidence to show what has already been done. If
The types of action offered to students in the UK through the current SEN Code of Practice are discussed below:

- When there is evidence that (a) a child is performing poorly at school, and (b) there is something that can be done to aid the learning difficulties, school action (SA) is the response. School action includes the work of the class teacher and the Special Educational Needs Coordinator’s (SENCO) assistance. School action can also include new equipment and/or new learning materials. A change in teaching strategy may also be appropriate. Additional support could be provided from the LEA but not on a regular basis. It starts when the teacher notices any emotional, behavioural, physical or any other difficulties despite the target teaching. He/she will contact the SENCO and the child’s parent to set an individual education plan (IEP). A copy of the plan is sent to parents and is reviewed at least twice a year to monitor whether the child is achieving the targets, and the suitability of the strategies (www.education.gov.uk).

- When School Action is not sufficient to remedy the problem, the next alternative is School Action Plus (SA+). External advice and support from the LEA or other outside agencies, such as the local health authority, can be sought. The external specialist will provide specialist input or regular visits. These services may include an Occupational Therapist, or a Speech or Language Therapist. These specialist advisory services focus on autism or one-to-one support. An educational psychologist will be involved. These external services of SA+ also involve increasingly detailed intervention planning. The SA+ action also requires an IEP for the benefit of the child and must be reviewed approximately every six months (Wigan Council, 2011, SEN (www.education.gov.uk)).

- If these SA and SA+ efforts are not sufficient, the LEA may decide to carry out a more detailed assessment, called the Statutory Assessment. The Statutory Assessment may result in a Statement of SEN. In most cases a child with a SEN will be able to remain within a mainstream school. If the actions to this point are not sufficient to resolve the child’s difficulties, and if problems remain once the SEN has been instituted, a Statutory Assessment of the child’s SEN can be requested - either by the school or the parents (Douglas Silas Solicitors, 2010). The LEA will consider whether or not the child receives a statement of SEN. These staff will articulate a child’s SEN and also identify any further help that may be needed. The decision depends on evidence that the child is not progressing, despite the

progress continues to cause concern, additional action should be taken.” ([http://www.npt.gov.uk](http://www.npt.gov.uk))
support the school is providing through SA+, and that the school does not have the resources to address the child’s requirements - such as time or special equipment. A thorough investigation will carried out by the LEA across all the child’s relevant resources, such as parents, school, therapist, doctor, and educational psychologist. This statement can include a list of the child’s needs, objectives and the resources required to meet those objectives. The statement also specifies how progress is to be monitored, which school child will attend, and where the child will be placed. The statement is not limited to educational requirements; his/her needs in other areas will be stated, as well as how these needs can be met (www.education.gov.uk, Douglas Silas Solicitors, 2010). The Code requires that the parents are given a draft copy of the statement in order to comment on the contents, before the final draft is created. It is to be reviewed annually.

- Individual Education Plan (IEP). The IEP involves the planning to set out the intervention for children who have SEN, whether it is SA, SA+ or children with a statement. The child’s teacher - with the SENCO - sets several targets in a particular order. These include short-term targets, long-term targets, strategies to be used, the provisions to be put in place, and a rough time plan.
- Mobility and independence educator. They are an outside-school specialist who helps to set IEP targets, holds the annual meeting and advises the school on effective approaches. They also could help in staff training.

There are other policies the government promotes to improve the school environment, such as ongoing assessments of the student performance to measure the teaching approaches and strategies (e.g., the Assessment for Learning and the Assessment for All, Wilkinson and Twist, 2010). Despite the improvement in the SEN provision over the last years, a review that was published, through the Autism education in 2009 highlighted the need for more inclusive schools, and efforts to meet the needs of the growing number of children with autism (Wilkinson and Twist, 2010). Wilkinson and Twist also investigated the role of assessment relating to inclusion education in mainstream settings, with a specific focus on assessment for students with ASD. Wilkinson and twist concluded that there is a lack of practical assessment of the students needs which effect teaching.

The Department of Education initiated a scheme in 2005 to promote social and emotional skills. The social and emotional aspects of learning (SEAL) focus on improving in-school behaviour, feelings,
friendships and social skills. The approach aims to develop emotional intelligence and empathy skills in schools and is aimed at teaching all children regardless of their level of development. Although it is an important approach to teaching, this programme assumes that children with autism have the social and the emotional recognition skills that were developed typically in children at an early age. It does not take into consideration the deficit the children have in understanding emotions and developing empathy (education.gov.uk, 2011).

As reviewed in the previous literature, the delay in emotional understanding affects children’s ability to interact and communicate with other people. This acts as a barrier to having a better learning environment (Volkmar et al, 1997). The government’s strategy for SEN has focussed on removing barriers to learning as an early intervention strategy. Yet children with autism do not receive this type of support as part of their school programme. This lack of support justifies the need to create an intervention programme such as that offered in the present study. Children with autism should be taught social emotional understanding skills that will aid their social interaction in a school setting and in the wider community.

2.4 - Literature review

To understand the value, contributions and limitations of previous studies, as well as to understand the importance of this current study, the available literature was split into two groups and reviewed. Firstly, studies that established the problems related to emotional understanding and their impact on social interaction; secondly, studies of intervention programmes to improve social skills and to teach children emotional understanding.

2.4.1 - Impairments of children with high-functioning autism in their social skills and emotional understanding

A typical infant is predisposed to respond to social stimuli and to form attachments with people around him/her (Sigman, 1997). The infant gradually learns to distinguish the familiar from unfamiliar by means of facial, vocal and touch stimuli. The infant looks at other faces for information
by tracking the gazes of others, and responds to emotional signals that are being conveyed. Studies have shown infants to have spontaneous responses, such as happiness, sadness, contempt and anger. On average, by seven months of age, they have achieved the ability to connect facial expressions to tones of voice, enabling them to respond to vocal expressions of emotions (Sigman, 1997). By contrast, children with autism rarely follow the gaze and do not imitate others’ actions. They maintain a fixed focus and, in general, fail to notice the meanings of another person’s gestures. ASD children do not look at others’ faces for information and are unable to differentiate between emotions. They are found to have defects in initiation and joint attention behaviour, and their social referencing behaviour tends to be inadequate. These deficiencies reduce their participation in creating shared meanings and learning from others (Sigman, 1997).

Retrospective analysis of the health records of children with ASD has shown that problems in social development are evident only from the age of 18 months or older. The children hardly initiated any social exchanges, and were found to be less responsive to the effects of engagement and interaction. Studies that were carried out using the checklist for autism toddlers (CHAT) have also confirmed that unusual social responses are seen by the end of the second year of life (Sigman, 1997). Researchers have long considered social impairments - including difficulties in social interaction and emotional expression - to be a definitive cluster of regressive behaviour, associated with autism (Volkmar et al, 1997). Of particular interest to researchers in this area have been the social-emotional characteristics and issues of ASD children who exhibit cognitive intelligence within a normal range. It is this particular subgroup that can, as studies show, engage in more complex and advanced social relationships than lower-functioning ASD children. As Kasari et al (2001) suggested, the most logical reason for this is that the higher-functioning children have the ability to compensate - at least partially - for their social limitations through their relatively high cognitive abilities.

Although their problems are viewed as minor when compared to those with severe autism, these difficulties must not be overlooked. Their disabilities can affect their normal everyday activities, even though their academic abilities, especially in their areas of particular interest, can be excellent. The difference in the social and academic worlds of children with autism makes it difficult for others to
understand how they can be so socially naïve or awkward; as a result, they often experience difficulties in making friends and can experience loneliness and frustration. For this reason, the current research chose to conduct its quasi-experimental intervention with children on the high functioning part of the spectrum as they often get overlooked due to their high level of function in cognitive ability and verbal language.

Problems in social initiation and social-emotional understanding have been identified as one of the key issues facing high-functioning autistic children. Like most children, they have a deep desire to be involved with their peer groups, but can exhibit signs of depression and - more acutely - of loneliness resulting from an unfulfilled desire for close friends and a lack of effective bonds with members of a peer group (Bauminger et al, 2003). Bauminger and Kasari (2000) reported that high-functioning children with autism do, indeed, feel lonely and that such feelings were experienced more intensely and more frequently than by non-autistic children. At the same time, these high-functioning children have limited and usually poor-quality friendships and exhibit limited social and emotional understanding of the experiences they encounter in their social lives (Bauminger and Kasari, 2000).

The aforementioned researchers identified two forms of loneliness among children with autism and typical development children in their research: one is ‘emotional loneliness’, where a child would feel sad or depressed; the other is ‘social-cognitive loneliness’, where a child would understand the physical meaning of loneliness by being alone or excluded from groups. Unlike typical children, those with autism do not link loneliness’ to friendships. They describe it as being alone but do not ascribe sadness to it. Although the children report their desire to have friends, and that they do have at least one friend, they still feel loneliness and their social cognitive feeling is not reduced (Bauminger and Kasari, 2000). Despite the findings of this research, it has some limitations. One is that reports of the questionnaire were obtained from the children themselves, which makes it difficult to distinguish between the socially desirable responses, and the actual one each child gives (Capps et al, 1995, cited from Bauminger and Kasari, 2000).

The National Autistic Society (NAS) defines autism as a disability that lasts throughout the individual’s lifetime and affects the way a person communicates with, and relates to, people around
them. For example, both children and adults with autism face difficulties in interacting with others. They are limited in their abilities to make friends and to empathise with others. Children with autism can often have accompanying learning disabilities, but everyone with the condition shares a difficulty in making sense of the world. Data obtained from longitudinal studies can highlight the issue of the long-term effect of autism.

It is useful at this point to review one longitudinal study that monitored children’s development of social skills. Beadle-Brown and colleagues (2002) conducted a survey from 1978 to 1979, which looked at the social impairments, communication problems and repetitive stereotyped activities of children with severe intellectual disabilities - both with and without autism - in Camberwell, South London. The participants were followed-up and reassessed in 1986, by which time they had become adolescents and young adults. The study was noteworthy, because it is one of the very few that has been conducted to look at the long-term outcomes for people diagnosed with autism. The changes in the social impairment over time were presented in the groups of “socially impaired” versus “sociable”. It was found that impairments increase for the people in the socially impaired group. It was also discovered that 93% of the initial population remained in their original social group, even when they were reassessed years later. The study implies that the triad of impairment continues to affect the lives of adults with autism. However, the study also emphasised that both people with and without autism, with intellectual disabilities, have social impairments.

One of the key approaches to understanding social skills and emotional understanding is the theory of mind (TOM) (Baron-Cohen, 1995). Between the ages of 3-5 years, children develop the link between people’s behaviour and their intentions, desires, beliefs and emotions; this skill is necessary to develop social interaction (Howlin, 1998). The ability to read others’ mental states (the theory of mind) does not develop normally in children with autism. In 1985, Baron-Cohen and others proposed that three of the basic symptoms in autism - the abnormalities in social development, communicational development, and imagination - might be caused by an abnormality in their development of mind-reading.
Studies have found that the reactions to personal feelings in children with autism are often well developed, and that they can understand simple emotions such as happy, sad, etc. (Sigman, 1997). However, they experience difficulties in explaining the causes of simple and complex emotions, and in understanding more complicated emotions - e.g., embarrassment, guilt, and pride (Kasseri, 2001). Emotional recognition is defined as the ability to recognise and understand different facial expressions that reflect simple emotions (such as happiness and sadness) and socially complex emotions - such as embarrassment, pride and empathy. Bauminger and Kasari (2000) have found that high-functioning children performed well on the recognition of simple emotions. Impairment issues did arise, however, when these same children were asked to explain the causes of these simple emotions. When confronted with more complex emotions (that is, those that are compounded and embedded within a matrix of cultural norms, conventions and rules), these children scored well below the normal range, thus revealing a narrower range of complex emotional understanding; they also required a longer duration and more prompts to generate an example of a complex emotion (Bauminger and Kasari, 2002).

Empathy and perspective-taking play an important role in social skills and the development of social relations. The literature established that children with ASD are deficient in empathy and therefore in their social interaction (Baron-Cohen et al, 1985; Bauminger and Kasari, 1999). However, few researchers have investigated the impact of the extent of this deficit in social interaction; that forms an important part of the current study’s hypothesis. This intervention programme has been designed to teach children to recognise emotions of others and to respond with empathy.

The literature suggests that high-functioning children also have a tendency to pay excessive attention to peripheral details of any social interaction - especially the physical characteristics of the primary speaker - rather than focusing on the more meaningful, contextual clues. Social emotions emerge later in development through knowing other peoples’ thoughts and feelings, but also through interaction with others. Interaction with others is likely to improve through experiencing social emotions (Kasari, 2001).
The literature has established that individuals with ASD face challenges in recognising emotions from bodily movements, facial expressions and tones of voice. Below is a review of the various pieces of research that investigate these challenges:

According to Bal et al (2010) and Kuupskko and his colleagues (2009), children with autism have difficulties in recognising simple emotional expressions, especially when they are not made verbally. Bal et al (2010) evaluated Respiratory Sinus Arrhythmia (RSA), heart rate, as well as accuracy and latency of emotional recognition in children with autism spectrum disorders (ASD), compared to in typically developing children. The children were shown videos of faces in a slow transition from a neutral expression to one of six basic emotions (fear, anger, disgust, sadness, happiness and surprise). The study’s findings showed that children with ASD have lower amplitude RSA and a faster heart rate, compared to the typically developing children. Children with ASD were much slower in recognising emotions and committed more errors in detecting anger. Using Frankfurt Test and Training of Facial Affect Recognition (FEFA), Kuupskko and his colleagues (2009) tested basic facial emotion recognition. The basic emotions were happiness, sadness, fear, anger, surprise and disgust. They had a total of 90 participants, 57 of whom were diagnosed with ASD and 33 were of typical development. They found out that ASD patients experienced a more difficult time in recognising these emotions in general. Specifically, they discovered that younger individuals diagnosed with ASD are much worse compared to the older ones - above 12 years of age. According to the researchers, emotional recognition requires individuals to have multi-sensory processing, or at least the capability to divide attention and focus their gaze on relevant information - something which individuals with ASD obviously lack.

Older individuals with high-functioning autism are mostly tested in recognising more complex emotions. Shamy-Tsoory (2008) investigated the ability of adults - diagnosed with high-functioning autism and Asperger’s syndrome - to recognise two complex social emotions that arise in competitive social situations. He tested envy and gloating, and compared their results with matched-age adults of typical development. The test was done using a modified eye-gaze task, based on Baron-Cohen (1995, cited from Shamy-Tsoory, 2008) with an added TOM task and perspective talking scale. The results
from a self rating scale found that both HFA and AS individuals have problems recognising these emotions, but have no problems when assessing theory of mind conditions. The study agrees with other studies on the subject of TOM - that highly-functioning adults in the spectrum might pass theory of mind tasks, yet they perform less well when trying to understand social emotions such as envy and gloating.

Another dimension in understanding emotions is recognising one’s own emotions; that is based on understanding one’s own functioning. Rieffe and his colleagues (2007) designed a study to examine emotional awareness in children with high-functioning autism. 22 HFA children were in the experimental group and 22 typically developing children in the control group. Children participated in single- and multiple-emotion tasks that contain four basic emotions: happiness, anger, sadness and fear. The first aim of this study was to investigate the children’s abilities to produce emotions based on their social experience. The second aim was to examine the children’s awareness of multiple emotions in social situations that require different perspectives. The researchers found that children with HFA were able to differentiate between emotions, but have problems in producing emotionally-evoked situations from their own experience. Another finding was that HFA children made fewer reports of more than one negative emotion in one situation and found it difficult to differentiate between one’s emotions within the broad descriptor, ‘fear’. The study concluded that those difficulties might result from a lack of development in the concept of emotion, especially in the negative domain.

The aforementioned studies reported results emphasising that children with ASD have difficulties recognising emotions, as proven by various methods (ranging from relation, to eye-gaze and autonomic). Researchers have evaluated respiratory sinus arrhythmia (RSA), heart rate, and accuracy and latency of emotional recognition; they have compared the scores of Training of Facial Affect Recognition (FEFA) test - like Kuupskko et al - and compared scores of the ASD group with those of typically-developing children on a self-rating scale of perspective-taking ability and the theory of mind task (Shamy-Tsoory, 2008). The outcomes have also highlighted that children with autism in the lower function experience more difficulties than those in the higher function. Adults and children in the HFA bracket are more able to recognise simple emotions, but when required to recognise complex
emotions of others, and/or link them to social events, they face difficulties. The final conclusion the studies showed is that individuals with ASD face problems not only in the recognition of others’ emotions, but also in recognising their own perception.

A number of studies indicate that well-designed interventions have proved effective in improving social emotional understanding, and in turn in improving social skills and interactions. The next section will examine those interventions.

2.4.2 - Review of the literature of previous interventions, their outcomes and limitations

There have been many studies evaluating interventions relevant to children with autism across the education, psychology and medical fields. One of the general criticisms in other reviews of interventions is the lack of evidence of having a universally positive impact. In one systematic review by Mills and Marchant (2011), it was concluded that only very few interventions have a solid research base; educators do not have a clear theory to guide them in selecting the intervention.

Despite the deficit in social skills of children with autism, the effect of structured intervention programmes is under-studied. White et al (2007) summarised the most reviewed social skills interventions, and concluded that they are targeted to fulfil the goals of “increasing social motivation, increasing social initiations, improving appropriate social response, reducing interfering behaviour, and promoting skill generalisation” (White et al, 2007). Although those interventions were not systematically evaluated, the strategies used within them are considered to be promising, based on theoretical links to the characteristics of children with autism. The most frequently reviewed strategies that implement those interventions were: making social roles clear, errorless teaching, modelling age-appropriate initiation, using natural reinforcement, using simple script, structuring teaching, ensuring a fun and safe environment, etc.

Another interesting review study was carried out by Gillis et al (2007), in order to compare features of interventions for children with ASD, by reviewing 17 studies from 12 journals (1999-2006). The study aimed at investigating the common approaches and techniques used in intervention, and how frequently they are used. This involved a retrospective review of interventions used to enhance social
skills, targeted at pre-school children who had been diagnosed with ASD. The results showed that teachers are the ones who most commonly implemented the intervention, followed by researchers, therapists, parents, and one study with a peer who implemented the intervention. Moreover, there was not only one person (or source) which implemented an aspect of the intervention. 13 of the 17 studies reviewed illustrated an average of 34 sessions per intervention, in terms of the length of intervention conducted. There are approaches of interventions which appear to be universal; these include modelling, reinforcement and prompting. The researchers stated that there is a need to specify why a social skill is targeted for intervention, and recommended that future researchers apply assessments and give a full description of each child’s social behaviour before designing the intervention.

As children with autism lack social skills, they lack interpersonal and positive interaction with peers (Volkmar et al, 1997; Bauminger et al, 2003). Therefore, social skills will not improve without exposure to other peers. There is an increased use of peers in social skill-based interventions, as a way of enhancing social interaction and to maintain generalisation (Belchic and Harris, 1994; Roeyer, 1996; Kamps et al, 2002). Peer intervention varied from using spontaneous peer interaction, to a more controlled interaction through peer training. The majority of peers in research were typical-development children, trained with various skills such initiation of an interaction, close proximity and prompting. The common criticism of the review is that, although children improve during the study, difficulties are noticed in applying those skills to day-to-day social interaction with peers, outside of the study (Belchic and Harris, 1994; Roeyer, 1996; Kamps et al, 2002).

According to Kamps et al (2002), there is extensive evidence showing that peer-mediated interventions, conducted for children diagnosed with autism, increase their participation rate if they are in a natural setting. It remains to be seen, however, exactly what peers contribute. Therefore, Kamps formed a study to investigate these factors. It was found that social interaction of the autistic children with their peers increased, compared to that in the control group, but students in the cooperative-learning control groups displayed more generalisations than those in social groups. Moreover, when 34 students were probed on video, there was more generalisation of skills from when the groups were composed of trained peers, and less when the groups contained only untrained peers;
more social interaction was observed when trained peers were utilised. Peer-training interventions that use prompting and reinforcement, as well as modelling within the context of activities, resulted in considerable improvements in the interpretation skills of autistic children. It was also found that consistent or regular contact with peers through inclusive classes also helped generalise the social behaviour, though less interaction was observed compared to what occurred under structured peer mediation. Another study that looked at peer-mediated intervention to promote social skills was Roeyer’s (1996). The researcher examined the influence of peers of typical development on the social interaction of children with high-functioning autism. The study used what they termed “peer-mediated proximity”. A group was formed by combining children at a typical-developmental level and children with autism. They were then instructed to play amongst themselves. The peers were also trained to prompt and reinforce the social behaviour, without creating more social interaction. Positive social behaviour among the studied children was increased. However the increases were only found in continuing initiation, and not for causing initiations of their own.

The present research adapted the peer-mediating method, by teaching the children in groups. Although all children had high-functioning autism, their cognitive and verbal ability gave opportunity for better interaction and response, which helped the manifestation of social interaction with peers outside of the experiment. Also, the mediation was implemented through structured and planned activities.

One of the approaches that is commonly used in improving social skills is the use of video modelling. Guel and Vuran (2010) demonstrated that social skills can be taught effectively through video models. They analysed 21 studies (2000-2008) where video modelling was utilised to teach social skills to individuals, from three to 15 years of age, with ASD. They found that 76% of the research conducted this approach in a non-natural setting (for example, in a school or a medical centre), and that 99% of studies focused on teaching positive social skills. They also found that there are several ways to conduct video modelling. One of these involves the participants being asked to watch recordings of skills, demonstrated in sub-steps. The one displaying the skills may be a model, or actually the case study child. Another method is to have feedback with video, which requires the participant to watch
his or her own performance in a non-edited tape. The videos can include slides, films and movie recordings in a single system incorporating sound, music, text, graphics, and animations. The researchers assessed the maintenance and generalisation of social skills, and found that 24% of the studies’ generalisation data were collected across participants and environment. However, the study did not give report to the level of generalisation. Another limitation of this study was the lack of analysis of the duration of videos used in all the studies reviewed. Guel and Vuran recommended that future studies should investigate comparing different methods of video modelling.

Christos and Panagiota (2008) used video modelling to teach complex skills to children with ASD. Their study revealed that video modelling is an effective supplement to peer-mediated treatment procedures. This is particularly true for children who are not always located in the same environment as their peers. Furthermore, video modelling is best when behaviour incompatible with the development of imitation skills has been eliminated beforehand.

In the following year, Ahearn (2009) used video modelling to teach two children with ASD reciprocal pretend play, in order to interact with typical development peers. The children were shown videos of two adults that displayed a designated play activity. The videos included 14 to 17 scripted verbalisations and a similar number of actions connected to the play activities. Ahearn reported that the video modelling effectively taught cooperative play and an increase in unscripted verbalisation was seen. Nevertheless, generalisation was not seen in a natural play setting with other peers. Ahearn recommended that future studies should address various ways to improve play skills with new peers using novel play materials. Modelling is explained further in this chapter under the social learning theory (chapter two).

Leaf et al (2009) evaluated a Teaching Interaction (TI) method, covering four social skills in five children with autism. The social skills were divided into four domains: “play skill, social communication skills, emotional skills and choosing the same friend skills”. The teaching intervention was designed to increase communication between the participants, and included: (a) a teaching interaction procedure; (b) priming and reinforcement of participants when they displayed social skills and engaged with their peers (in the control group). Using teaching interaction method was one
method within a larger teaching package that include modelling, priming and reinforcement. Assessment of the participants prior to the intervention indicated that the children had almost no behaviour that fell within these four domains. However, after the intervention programme, an increase was seen in their communication abilities and play. The result supported previous research that had showed the effectiveness of the Teaching Interaction method. Despite the small sample size in this study, a series of assessments over time showed that the teaching intervention effectively increased the targeted social skills and also the development of initial associations that lay the foundation for the formation and fostering of friendships. The major limitation of this study is that the teaching package included several modules; the TI itself also comprises of several elements, which makes it even more difficult to determine what method worked best. The researchers suggested that future studies should analyse teaching methods, as this was not targeted in their analysis. In my belief, analysis of the targeted skills is necessary too, as these researchers aimed at several social skills which made determining which skill changed, and to what degree, unclear. This observation was taken into account when designing this current research. One skill was chosen in the intervention programme (that is emotional understanding) to determine its impact on social skills and social competence.

Most studies examined the effectiveness of one approach used in teaching children social skills, such as peer meditation and modelling. A recent method used in enhancing social skills is the use of a multi-model approach, where different approaches are integrated and designed according to each child’s level of social skills and age. Spence (2003) summarised the five approaches that are known to be used for this purpose, in order to develop her training programme:

- Behavioural social skills interventions: the approaches in behavioural social skills training focus on various methods of increasing appropriate responses such as modelling, role-play, direct instructions and reinforcement and feedback.

- Social perception skills training: this teaches children to recognise the cues that will help them to interpret their own emotions and the emotions of others, as well as the clues of social situations.

- Self-instructional training and self-regulation: the self-instruction method is used to allow a child to gain control over his/her behaviour by giving him/her verbal instructions.
Social problem-solving: this approach teaches the children to identify their problems and choose better solutions, before predicting the outcomes of each solution. At the end, the children practice choosing the appropriate response.

Reduction of competing/inappropriate social responses: this method includes anger management, relaxation training and parental training.

The scope of my research is to teach social-emotional understanding to children with high-functioning autism and measure its impact in social interaction. Understanding emotions requires the child to take the perspective of others, and to have the ability to understand their emotional states and respond appropriately. The general criticism when analysing the literature is the lack of generalisation. Different teaching methods were used - and the children do show improvements in the teaching setting - but the learnt skills do not apply to the non-training setting, or with non-trained peers. Moreover, generalisation becomes weaker still, if the teaching is done using puppets or any similar non-human object. Another limitation common in the research reviewed is the lack of a control group. The following paragraphs shed light on such research.

A number of interventions have proved effective in improving social interaction of individuals with autism (including high-functioning autism) by addressing other aspects in the social domain, such as emotional understanding, improving cognitive abilities and communication skills (Bauminger, 2002; Mahoney and Perales, 2003). In Morison’s study (1997), based on the development of social and emotional understanding, the findings suggest that - contrary to stereotypes that portray children with autism as emotionally flat and unable to form attachments to others - they express emotions, engage in and even initiate social interactions, and form strong attachments to parents and teachers. Downs and Smith (2004) studied children with high-functioning autism, in comparison to typical development children and children with ADHD. The study focused on cooperative social interaction, emotional understanding, and social behaviour; it assessed children who had recently received intensive behavioural intervention, and provided a number of important clues about the aspects examined. The original intentions of the study were: (a) to explain why children with autism rarely exhibit
cooperative social behaviour, and (b) to ascertain whether this problem reflects global developmental delays or autism-specific deficit. The study found that children with high-functioning autism did show an emotional understanding deficit compared to their ‘typical’ peers, but the difference was not as severe as suggested. Furthermore, children with ADHD show more delay than those with autism and the typical development children. The researcher explained this result by stating that most of the children with autism in the study received a programme that included social skills training. Another interesting finding is that children with autism perform worse in the emotional recognition task using photos of real people. When testing social cooperation, the results found that children with autism did not behave in a passive way, as compared to children with ADHD, who scored lower than the non-clinical children. However the patterns of their social behaviour were described as odd, and with “unusual communication”. This study encouraged the current researcher to study the effect of teaching similar tasks to children with autism, and assess the outcomes in terms of social competence.

There are pivotal developmental behaviours that play a key role in the child’s social and emotional development. Parents have a key role in interventions that had a relationship focus, and create a more responsive interaction. Mahoney and Perales (2003) undertook a study to teach children with ASD social emotional skills. Parents were included in the intervention programme over a period of 14 weeks. Their sample was made up of 20 children, between the ages of three and four. Their intervention programme showed an appreciable improvement in the children’s interaction with parents, as well as positive effects on children’s social skills. However, this study did not use a control group.

In Bauminger’s study, the focus was on the effectiveness of cognitive behavioural intervention with particular emphasis on social and emotional understanding and social interaction (Bauminger, 2002). A sample of 15 high-functioning children with autism was included in the study, which focused on a number of social areas believed to enhance social and emotional understanding - for example, recognising facial expressions, social behaviour, and communication skills. The intervention also involved training those who are close to the children (parents, teachers and peers). The two methods of social-emotional training used in this study were shown to make a significant contribution to the
change sought. The first was training in social-personal problem-solving that was used to enhance the child’s ability to read and interpret the social and emotional cues accurately, and then to translate them into socially acceptable behaviour patterns. The second one was effective education, which focused on trying to expand the high-functioning child’s effective range of response, as well as fostering an enhanced ability to associate the child’s cognitive link between understanding and emotional response to the given situation (Kendal and Braswell, cited in Bauminger, 2000). The findings of the study were found to be encouraging as there were real improvements in social problems, isolation and emotional understanding. However, although positive outcomes were shown by this study, it was not clear which factors accounted for the improved social interaction. Due to the involvement of different agents in the children’s environment and the absence of a control group, the study was not able to determine whether the change was a result of the intervention. Based on this limitation, my research did not involve other agents in the intervention. It focused on teaching all the elements related to social and emotional understanding, but other factors were eliminated in order to solely assess the intervention affect.

Researches revealed the impairment in the theory of mind (details described below in this chapter under theories of autism). A significant piece of research adopted a teaching approach to assess whether we can teach children with autism emotions, belief and pretence. Hadwin et al (1996) taught thirty children with autism using pictures and pretend play: 1) emotional understanding starting from simple emotions then gradually moved to more complex emotions; 2) teaching situations that causes an emotion; 3) desire as a cause of an emotion; 4) belief-based emotion. The study showed that children with autism can be trained to learn emotions and beliefs, and thus grasp the meaning of pretend play. The children were able to pass simple tasks; they moved to more complex tasks, and continued even when new materials were introduced. Results also showed no improvement in the tasks involving spontaneous pretend play. There was also no evidence of what was learned being generalised to non-teaching situations. It is generally argued that high-functioning autistic children have cognitive abilities which enable them to learn emotions, beliefs, and verbally request pretend play within their
group and environment. The problem, however, surrounds how to help them extend these abilities beyond the taught confines.

The study by Ozonoff and Miller (1995) tried to teach five adolescent boys with autism the Theory of Mind (TOM) skills, in order to improve their general social skills. The experiment is worthy because it used a pre-treatment post design, and includes an age- and IQ-matched control group. Another positive point of the experiment methods is the use of blind assessor. The programme focused on teaching social and communication skills, with emphasis on the cognitive skills to infer the mental status of others. It found better performance on the TOM tasks in the treatment group in comparison with the control group. However, according to the parent-teacher social skills rating system, TOM performance did not extend to other social behaviours.

Teaching empathy to children was the focus of Townsend and Poulson’s study (2009). They concluded that social skills were taught using the following procedures: prompting, modelling, and reinforcement. They also wanted to experiment as to whether those procedures could be used to teach empathy as an important factor of social interactions. Four children were called to attend an education programme offering both home-based and centre-based behavioural instruction. Instructors used puppets and dolls, and presented vignettes based on three emotion categories (i.e., sadness or pain, happiness or excitement, and frustration). Different effects were displayed, as well as prompt delay, behavioural rehearsals, modelling, manual prompts, and reinforcement. The purpose of the study was to enhance the frequency of empathy responses. The researchers utilised a quasi-experimental design and one experimental group design in pretend-play settings; they showed that their intervention was effective, and that children with autism can learn socially-relevant empathy skills. Their study also resulted in increasing empathetic response to non-training stimuli in the three response categories. Moreover, dolls and puppets helped to improve complex social skills (i.e., empathy) in these children. One major criticism of this study is that teaching was through dolls and puppets rather than real people, which has been proven to affect generalisation of the learnt skills to real-life situations.

Begeer et al (2006) used 28 HFA boys and a control group comprising of 31 participants in their study, in order to explore whether varying the relevance of children’s attention to emotional
expressions would increase attention to emotional cues in others. According to them, reading the emotional expressions of others is essential for social interactions to be maintained, and these emotional expressions help the child to anticipate the other person’s interaction. Unlike many mental processes, the emotions are usually displayed by facial expressions (Baron-Cohen, 1995). Emotional information facilitates mind-reading, and attention to facial cues is thus relevant to the emotional expression (Hobson, 2002). A deficit in these mind-reading abilities could therefore lead to the social disabilities seen in autistic children. HFA children are found to perform well in recognition of basic emotions such as anger, happiness, sadness and fear (Davies et al, 1994; Loveland et al, 1997), but the recognition of more complex emotions (e.g., surprise) is a bigger challenge (Baron-Cohen et al, 1993).

In Bageer et al’s (2006) study, the children assigned less importance to facial features when selecting emotions from photographed faces than the control group. They selected pictures that were comparable on non-emotional features (e.g., the presence of glasses). There was no difference in results for the two groups when the children were asked to focus on likely behavioural outcomes of the expressed emotional states. This suggests that ASD children are able to pair a positive or negative facial expression with a positive or negative social consequence. However, typically developed children attended to emotional expressions in both conditions, but ASD children attended to emotional expressions only when situational determinants triggered the relevance.

The results were unable to infer whether children with ASD would have an intuitive understanding and recognition of emotional processes happening around them. Children with autism in the study used a different information processing style, especially the HFA children, as they attempted to compensate for their lack of “natural” attention to emotions, by using other cognitive strategies. Grossman described this processing strategy as “analytical and verbally-mediated” as opposed to “holistic and intuitive” (Grossman et al, 2000).

The research also showed a substantial increase in the attention to emotions when they had been primed; this finding may mean that adding social relevance results in a qualitative change to newer criteria for processing, in contrast to an enhancing strategy that was already being employed. This
confirms that children with autism need help in deciding when and where to look. The problem identified here is that it would be harder for educators to give explicit instructions to children regarding responses to emotional expressions in vague social situations - such as those which are more typical to normal life. This study was limited because there was little information regarding the intellectual abilities of the children in the control group. This leads to certain cautions that need to be exercised when interpreting the results of the study.

Travis (2001) examined the correlations among several measures of social understanding and social interaction competence, in verbally-able children with autism. The study included several indices of verbal knowledge (i.e., effective perspective-taking and false understanding), indicators of more intuitive forms of social responsiveness (i.e., initiating joint attention, empathy and concern) and tests of social interaction competence (e.g., pro-social behaviour in a structured laboratory task and level of engagement with peers in playground). However, there were time constraints, and the children in the study did not cooperate fully, which resulted in the researcher not obtaining all measures for all participants. Some children’s data were excluded from the analysis; it was evident that they did not understand the task at hand. The results showed that there were no ceiling or floor effects. The control group showed more empathy, more initiation at joint attention, and more concern for distress. However, children with autism displayed impaired social interaction. The impairment in initiating joint attention and empathy were related to the degree of impairment in social interaction. One interpretation for the correlation among initiating joint attention and social interaction, would be that initiating joint attention is an indication of impairment in the degree of executive function (EF). Someone with ASD is known to have EF impairments in preservation and initiation (Ozonoff and McEvoy, 1994). Alternative accounts of the relationship between empathy and social interaction include a person with more self-awareness being able to report their feelings more accurately, despite not actually experiencing more empathic feelings. A better awareness of one’s own emotions could indicate increasing self-awareness. There were no correlations among other measures of behaviour and understanding - for example, between social interaction and responsiveness to distress. Nor was there a correlation between social interaction and false belief understanding, a finding which is
inconsistent with previous research. The hypothesis that TOM might facilitate peer interaction and pro-social behaviour was not confirmed by this failure to find a correlation between social interaction and false belief understanding.

According to Wright (2008), young people diagnosed with HFA were compared with age, sex, and IQ-matched controls on emotional recognition in a pictorial context. The ability to recognise emotions in faces and the ability to identify occupations from the contexts were positively correlated with both increasing age and IQ, irrespective of diagnosis. Unlike the control group, the ASD group mirrored the facial expression before interpreting it.

The section below analyses the limitations of the aforementioned literature to shed light on the importance of the current study.

**Summary of limitations of previous intervention programmes and studies**

A review of related literature reveals that most studies include teaching emotional recognition and understanding as part of a comprehensive intervention that teaches social skills, and/or other skills. The current study focuses on teaching the children how to understand emotions and feelings about others, and how to respond to their feelings using intensive, direct and indirect teaching through multiple activities. Previous researchers who taught emotional comprehension had designed programmes that tested the same fundamental ability but do not link the false-belief task performance with performance in reality (Parking, 1995, cited in Jordan, 1999). Studies that teach children to improve their theory of mind used a systematic method, without connecting understanding emotions to the real world or social situations. For example, Howlin et al (1996) focused only on teaching children the skill of passing tasks. The present research focuses on actual practice in learning emotional understanding, leading to social improvement. It links cognitive ability to real-life situations. This is done, for example, by varying the types of emotions taught, including complex emotions such as embarrassment, pride, frustration and confusion. Some researchers argued that children with ASD lack the cognitive ability of TOM, and therefore their cognitive ability to
empathise is relatively low. Examples of researchers who looked at the cognitive component are Baron-Cohen (1997) and Roeyers (2000).

Another researcher who looked at the affective component and the physiological element is Blair (1999); he tested the level of emotional understanding from a cognitive approach, and the training was set from a clinical point of view. In the current study, the researcher took into consideration the ASD characteristic. As studies established, individuals with ASD can understand simple emotions, however have difficulties understanding complex emotions and fail to understand the social reason behind them (Sigman 1997; Bauminger and Kasari, 2000). As a result, the present researcher designed activities beginning with simple emotions, then moving on to complex emotions and social causes using various approaches.

Analysing studies that consider delays in emotional understanding led me to the study by Rieffe and his colleagues (2007) - reviewed above - that suggested that a delay in recognising one’s own emotion might be due to a delay of knowledge in the concept of emotion. The present research taught children the meaning of specific emotions using activities such as the dictionary activity, linking the emotion to a social event, and teaching them that people may have different reactions, depending upon perceptions.

The above literature review reveals that there is a good understanding of the limitations of children with ASD in their social interactions. It also shows that different intervention programmes were tested over time. However, very few of the interventions were tested in a case-controlled manner. Therefore the current researcher is using a control group in her educational intervention programme.

White et al (2007) listed a number of methodological problems with group-based social skills training for children with ASD. These weaknesses include a failure to fully measure the social skills and other deficits known to characterise children with ASD. Therefore, the present study used sufficient measurements that are sensitive and reliable, in order to assess the children’s social skills, social relationships, emotional understanding and social-emotional skills. It is important that these measures should not only assess whether a child learned a specific skill in the intervention programme, but also the extent to which the learned skills are generalised into the child’s natural environment. Strong
research makes use of multiple informants to obtain data (e.g., both parents and teachers); studies such as Ozonof and Miller (1995), Cotter (1997) and Trimarchi (2004) used multiple resources, and have clear findings. The current research assessed the intervention outcomes using different resources: parents, teachers and the children themselves. This intervention is delivered in a small group setting, where the change could be seen both at home and in school. Assessing children through teachers’ and parents’ questionnaires will give an accurate indication of the effect. To investigate transferring the newly learned skills to the child’s natural environment, the current researcher created a checklist that aims to assess the impact of the intervention. Parents, as the closest agents to the children, answered the checklist, designed to measure the effect of learning emotional understanding on a child’s daily social life.

Another important data collection source is the subjects themselves. Many researchers avoid self-reporting among children with ASD, due to the nature of autism. When reviewing the self-reporting tools, there was not an appropriate self-rating measurement designed for children with autism. It is useful to use one for collecting closely-related outcomes. The current study used a self-rating tool to measure the children’s ability to understand emotions, but also added the parent’s checklist that will be compared to the self-report. An additional self-report assessment was adding a child’s version of the teacher and parents social communication assessment. Issues of suitability of such a tool was explained in the methodology chapter.

This study also examined individual cases in depth, to explore the outcomes of the intervention. Children from the sample were examined, in order to gain knowledge about the different elements that surround their social-emotional understanding, as well as to see whether improvements were made, and to what extent.

2.5 Theories of autism and their relevance to the focus of the study

In this section, the theories incorporated into the design of the educational intervention programme are discussed in detail. Cognitive and social learning theories are also identified and applied to explain the features of typical autism and HFA.
There are many psychological theories (for example, the mind blindness theory, executive function theory, and central coherence theory) that provide a level of explanation of understanding autism and its related behaviour. These theories play an important role in understanding the cognitive, emotional and social development of autism. Below is a detailed explanation of each theory, what it refers to, a brief critique, and how it was applied when devising the intervention programme.

2.5.1 – Theory of mind (TOM)

In order to explain the mind blindness theory, one must be introduced to the theory of mind (TOM). This refers to cognitive theory and can offer explanations of the individual’s ability to interpret the mental state - including the use of thoughts, beliefs, desires, emotions, etc. - of themselves and others around them (Baron-Cohen et al, 1985; Baron-Cohen, 1995). When one “mind-reads”, this refers to the methods by which one tries to make sense of an individual’s behaviour by analysing body language, facial features and thoughts. Based on these observations, a further set of mental states are thought up, and then used to predict what the individual might be doing next. Mind-reading not only allows us to understand what other people say or do, but also helps us to justify their actions and reactions. Impairment in the development of this mental ability has a drastic effect on social learning, as seen in children with autism (Leslie, 2004).

The mind blindness theory explains a lack of ability to develop a TOM. Children with ASD are known to have such a delay in developing their TOM (Baron-Cohen, 1995; Happe, 1999). This late-developing TOM can be regarded as the root cause of many of the developmental abnormalities that characterise children with autism. They are as a result unable to empathise and relate to another person’s thoughts, positions, and feelings (Baron-Cohen, 1995; Frith, 2003). Empathising requires two major elements: (a) the ability to interpret mental states of others, and (b) having emotional reactions that are appropriate, given the mental state of the other person (Baron-Cohen, 1995; Leslie, 1995).
TOM has several origins in developing human behaviour. One of them is imitation. Infants are able to imitate lip and tongue movements, as well as other facial gestures. This shows that they are able to connect the actions of others with their own actions. As early as two weeks of age, they can imitate mouth opening, tongue protrusion, and eye movements. Infants try to map the actions of others to their goals by making self-produced movements that match the visual targets. They move their lips and face in response to expressions seen in others. This imitation can be extended to perception; if infants are given certain shapes to feel with their mouths, they will concentrate more on these shapes. This confirms that the visual action was driven by what they felt. When infants are shown an unsuccessful act, like aiming at a target, they can read the intentions of the shooter. They are able to understand persons by involving their goals and intentions - this understanding is necessary for developing communication. The memory of an infant is made up of lasting representations of perceived events. These memories are then used to generate motor reactions long after the event has passed. If an infant is subject to a sound accompanied by a visual image of a vowel pronunciation, the infant will make a similar lip movement when the sound is replayed. This implies that the infant is able to associate the sound with the lip movement of the image. Infants use imitation and event perceptions as part of their social development, in so far as they can match the behaviour they detect to their own behavioural productions.

Doherty (2009) explains that children can predict behaviour by knowing the desires of an individual. Mind blindness refers to the failure or inability to attribute mental states (desires and beliefs) to self and others, and this condition exists in children with autism, impairing social interaction and communication. The ability to read, understand and predict the behaviours of others in relation to their intentions is either lacking or poorly developed in people with autism (Frith, 2001). For example, John has a box and Sam has a bucket. John puts a tennis ball in the box and leaves. Sam picks up the ball and hides it in the bucket. When children are asked where John will look for the ball, normal children will guess that he will look for it in the box. This looks obvious, but children with autism fail to guess correctly. They say that he will look for the ball in Sam’s bucket. These children are unable to understand deception and hold the belief that John will look for the ball where he left it.
TOM deals with emotions, beliefs, and communication in relation to others. The social environment acts as a trigger for the development of TOM. Emotions could be caused by physical events. For example, receiving a present makes someone happy, injury makes someone cry, etc. Normal children are able to link these emotions with the physical causes. They tend to restrain themselves from hurting others so that they do not cry. When a person is sad, they might consider giving presents to make him/her happy. Happiness can also be evoked by getting something desired. Typically-developing children are able to understand these emotional causes, however children with autism have difficulties associating the emotion and cause.

Infants are able to relate actions to the intentions of the actor. This relation is important for social development. They are able to understand figurative speech, i.e., metaphors, sarcasm, and irony. This understanding requires the child to understand the speaker’s intentions. Children are in general able to relate a long, fixed gaze to intense thinking. In school, children develop play skills which facilitate social co-operation. This involves participating in group games where each child has a different role. For example, in a police and robber game, the children will act according to their roles in the game and what they know about police officers and robbers. Children with autism are reluctant to play or have poor coordination between different parts of play (Hughes and Leekam, 2004).

There are a number of studies and much published research in this area. The following paragraphs summarise the research that has tested the TOM ability of both typical development children and children with ASD. Hobson (1986) tested one group of children with autism and another group of typical development children on their ability to match facial expression photos with a person videotaped, in terms of gestures, vocalisations, and contexts. Children with autism performed considerably worse when matching emotional expressions, suggesting difficulties in recognising how different expressions of an emotion are related to each other, thus explaining autistic children’s difficulties in understanding emotional states.

Another study that tested children with high-functioning autism found that they engage less in pretend play, or that their idea of ‘pretend’ is limited to more rule-based formats (Baron-Cohen, 1987). He
studied spontaneous pretend (symbolic) play in 10 autistic 4-22 year olds, ten 2-12 year olds with Down syndrome, and 10 normal 3-5 year olds. The children’s behaviour was coded into 1 of 4 play categories – sensory-motor, ordering, functional, and pretend - through the spontaneous activities. Results show that among children with autism, their abilities to engage in pretend play were severely impaired, in contrast to children with Down syndrome and no disability.

A test was designed by Pratt and Brayant (1990) to assess that seeing leads to knowing. Children were given two storylines: one about a character who looked into a box, and another featuring a character that touches a box. These children can understand that it is not enough to merely touch a box in order to know what is inside it. Baron-Cohen and Goodhart (1994) tested 3 children with high-functioning autism and typical development children of matched age, using the same test. In their study they found that HFA children demonstrated a delay in their ability to pass the ‘seeing leads to knowing’ test.

Nine-year-old children with HFA find it difficult to understand and interpret another person’s expressions, based on cues from the eyes, and also to make an educated guess about what they are thinking or feeling (Baron-Cohen et al, 2001); similar results are found with the adult test - advanced mind-reading is also difficult for adults with high-functioning autism (Baron-Cohen et al, 1997).

2.5.2 Critique of the TOM and its relevance to the current study:

The TOM which was developed by Baron-Cohen, Frith, Leslie and others posits that other people have minds and that the ability to have an understanding of others’ states of mind is developing naturally. Many researchers have criticized TOM as a way of explaining children’s behaviour. Their idea is that the understanding of others’ state of mind comes from years of learning and that it is not simply a natural talent. Hacking (2009) feels that developing language and social interaction is a result of practices based on norms. He adds that the children’s ability in language and social competence should not be theorised about, but rather seen to reflect that these children’s behaviour
being different from other children. He argues that practices such as roller skating cannot be
developed by reading books about how to skate, but by trying to skate. TOM suggests that we can
infer intentions from observing behaviour. McGeer (2009) argues that TOM cannot account for the
symmetry experienced between two people who fail to understand each other. People with ASD might
pass TOM tasks, but perform poorly in those dealing with core aspects of social information. Children
with autism have several impairments in social and communication skills, which are not covered
exhaustively by TOM. This theory instead considers age, IQ, and language. Achieving full language
development requires practice - not just observation of lip movements. Hacking’s and McGeer’s
views accommodate the neurodiversity approach - explained earlier in this chapter - which states that
children with autism experience the social world in a different way from other children and that when
they are placed in similar situations, they will act differently. It is possible that TOM does not fully
explain the social interaction with others and that children learn their social skills by practice, but this
does not address the fact that children with autism are lacking skills in social and emotional
interaction. Both theories indeed relate to and could complement each other; on the one hand, the
TOM explains the importance of understanding our and others’ state of mind with regard to
improving our interactions with them (Frith, 2003) while on the other hand, people learn to connect
with others and have greater insight through practicing and experience. If we assume that children
with ASD are going through the same experience as typical development children, but are slower in
learning or missing the ability to learn, then it is important to find ways to improve this ability and
give them better social interaction. The idea of learning through practice could be used intensively
with children with autism, as they are unable to learn at a normal pace.

Although Hacking, McGeer and others did not agree with the TOM cognitive approach, to my mind, a
theory of mind is important for the diagnosis and treatment of autism. Recognising the core deficit of
people with autism in interpreting the behaviour of others, and perhaps trying to find its cause, will
help educators to tailor their programmes towards children on the ASD. TOM tests found that
children with ASD's ability to understand others’ emotions varies according to their exact position on
the spectrum. Children lower on the spectrum have more difficulties to recognise and interpret others’
emotions than those who are higher functioning (Loveland et al, 1997). Also, children have a higher ability to understand simple emotions - such as happy and sad - than complex emotions - such as embarrassment and proudness (Bauminger and Kasari, 2001). Therefore, when designing a programme, it is important to know the level of the children’s ability to read others’ minds, including emotions and intentions. Despite the success of TOM in explaining the delay in autistic children’s social and emotional communication, as well as their delay in imagination, the theory does not give an explanation for other delays that characterise autism, such as verbal language, repetitive behaviour and rigidity in routines. Other cognitive theories attempt to explain these aspects, and are explained below in this chapter.

In the current study, the main aim of devising the experimental intervention programme was to improve the children’s ability to recognise their own emotions, and those of others, and to respond accordingly, i.e., to improve their mindreading ability and empathy (explained in the section below). The question that should arise at this point is why we should teach children to mind-read. This thought, as well as the thoughts raised in literature review in this chapter, laid the foundations for my hypothesis that tests the benefit of teaching the children to understand emotions. The current study aims to test whether or not improving TOM in children will have an impact on their social life. In other words, if children improve their abilities to read others’ feelings and respond to them appropriately, will it improve their social and emotional interaction? This study agrees with the role of TOM in understanding others’ behaviour, emotions and intentions, therefore the activities designed reflect the main goal - namely to teach children with high-functioning autism to identify and respond to their own feelings as well as the feelings of others, thereby improving their existing social relationships.

**2.5.3 Empathy in TOM and its relevance to the current study:**

Although empathy has been extensively researched, its definition varies across researchers. However, there is a common acknowledgment that empathy encompasses both the cognitive ability to
understand others’ emotions as well as an emotional response to another person’s state of mind (Davis, 1994).

A myriad of studies show that children diagnosed with autism lack empathy (e.g., Sigman et al., 1992; Yirmiya et al., 1992). The typically-developed, 9-year-old child can determine what might hurt another’s feelings and therefore choose to leave it unspoken, but children with HFA have an average 3-year delay in developing this skill, despite having normal IQs for their age (Baron-Cohen et al., 1999).

Yirmiya et al. (1992) examined a group of children with high-functioning autism by showing them short videotapes that depict children experiencing different events or emotions, and compared them to typical-development children of the same age. Children with high-functioning autism scored less in labelling the emotional states of others, perspective-taking, and responding with empathy. The best way to know how people with autism feel about others’ emotions is through autobiographies of people with autism themselves. Ellis and his colleagues collected samples from individuals with Asperger’s syndrome who wrote prose or poetry about their experiences. Many find it confusing and puzzling to recognise other people’s emotions (Ellis et al., 1994, cited in Attwood, 1998).

There are various studies that measure empathy levels. Roeyers et al. (2001) conducted research using static mind-reading tests on high-functioning autistic (HFA) adults. Stories were followed by open-ended questions, and photographs of the eye region, while showing: (a) basic mental states - such as afraid and sad; (b) complex mental states - such as guilt. Empathic accuracy stimulus tapes were used. The mind-reading ability of the HFA adults was found to be not as impaired as the control group. However, the empathic accuracy test showed that the control group did better than the HFA group.

The stories task showed similar findings to those of Happe in 1994, confirming that HFA adults were similar in their mental justification abilities compared to the control group, because they gave as many accurate justifications as the ‘normal’ adults. They had a good understanding that the mental states existed and were able to recognise situations where the knowledge of the mental states of others was
required. The eye photograph task results were different from those of Baron-Cohen et al (1997), because the HFA group had scores similar to those of the control group. Having a control group in the study gave the results a greater statistical significance.

This deficit in empathy underlies the difficulties in social and communicational development, and in imagination about another’s mind. The present study focuses on teaching children emotional understanding and empathy as a desired response to other people’s emotions. There was a need for an assessment, in order to enable the researcher to evaluate the success of the intervention programme. When reviewing the literature to find an assessment tool that could measure empathy and other positive responses, there were few suitable to serve the purpose of this study - one example of a suitable measure is the Empathy Quotient (EQ). The EQ has shown that individuals with high-functioning autism, or Asperger’s syndrome, show significantly low scores, as compared to a similar-aged population (Baron-Cohen, 2004). However, there are limitations to these self-reporting assessment tools which led to the need for a new checklist, devised by the researcher. Some of the limitations are as follows:

The EQ might be affected by the child's current emotions into consideration (Baron-Cohen and Wheelwright, 2004). It is for this reason that the researcher developed a checklist that indicated the emotional abilities, despite what the children think of themselves.

The EQ is a self-rating assessment and could be influenced by various factors, such as personality, bias, age, or gender. Therefore the researcher designed a checklist that could be completed by the parents.

2.5.4 Central Coherence Theory (C C)

The human brain has a preference for global cognitive processing over local cognitive processing. This central coherence theory supposes that people who are diagnosed with autism are biased towards local processing rather than global processing (Frith and Happe, 2006). Most of these individuals
perform better in tasks requiring local processing and focusing more on details; as a result, they make less allowance for the wider context. In the late 80s, Frith first summarised that people with autism have weak central coherence, which can be demonstrated by thinking about the smallest possible parts while failing to look at the big picture. The theory explains why individuals with autism pay more attention to detail in communication and interests but have difficulties with social interaction. According to WCC theory, the social impairment in people with autism is because they do not take account of the social context during communication. However, some of the activities requiring local processing are verbal - tasks such as homograph pronunciation, the embedded figures task and the block design subtest of the Wescher IQ test (Baron-Cohen, 2004). They are able to process information in these scenarios, contradicting the notion that individuals with autism perform poorer in verbal tasks. These people also perform well in non-visual local tasks, such as pitch and melody perception. This is caused by a failure of the central nervous system to integrate sources of information meaningfully. The individuals are unable to transfer all pieces within the framework to short-term memory. For example, they are able to match shades of the same colour among a picture with several colours. However, they might be unable to find rhyming words in a paragraph containing several words (Joliffe and Baron-Cohen, 2001).

In recent research, the lack of central processing is attributed to superiority in local processing, or more detail-focused processing. People with ASD lack the generalization required for global processing, and pay more attention to small details (Happe and Frith, 2006). In music, they pay more attention to the pitch of the sound than the overall melody of the song; pitch is a local process, while melody requires combining the pitch and timing effects of the song. They have high thresholds for coherent motion perception and reduced susceptibility to visually-induced motion. In the embedded figure task, the children are shown an image, which is then embedded onto a larger image. This requires retrieving information from the memory regarding the first image, to be able to identify it from the bigger image. The thinking process takes a long time, and the individual might be unable to make the right choice (Happe, and Frith, 2006).
Happe and Frith’s review of 50 studies of the WCC theory (2006) found strong evidence for a local bias in individuals with ASD. These individuals connect information such as daily routines and calendar calculations. They are able to relate simple visual elements coherently when drawing. Activities such as chaining pictures to form a coherent story require global processing of figures; participants have to take into account the adjacent pictures for the story to flow. However, this task can be completed without linking the pictures together. The individual can write a story describing a certain picture, or pictures, without chaining the events. They are able to develop a chronology of the events in the pictures to produce a meaningful story. This requires local processing of the events, which in turn implies that they are able to link information within a local domain to develop coherent representations. Interpreting a daily routine requires local processing; the individuals can link together activities in the school schedule but fail to match together sentences in a grammar test.

This theory explains the success experienced in individuals with ASD in activities where attention to detail is required. Such individuals perform better in professions such as engineering and mathematics, which require observation and understanding of specific details. Most of the activities in such professions are visual, not language-based. Therefore, the preference exhibited by individuals with ASD explains their inability to process large and varying pieces of information. These individuals lack universality, but are more specific. Poor language development exhibited by such children can be exhaustively explained using this theory, and it provides a framework to test the differences in language coherence.

2.5.5 Critique of WCC theory and its relevance to the current study

Despite the strong evidence from the previous studies that support WCC’s explanation of cognitive local processing in people with ASD, some research fails to replicate the results; on the contrary, they find results that disprove the WCC theory (Ozonoff et al, 1994 and Mottron et al, 2003). Several conflicting results have emerged from studies testing this theory. Children with autism can link together visual illusions using paper and pencil tasks, instead of three-dimensional embedded images;
they also pay more attention to particular details rather than the whole picture or musical melody. This means that they have central coherence that is only narrowed down to certain details. They have a core thinking capability, but it is biased towards local processing of information. Individuals with autism integrate properties of single objects such as colour and texture, and process the meaning of simple words. Weakness is only experienced in connecting different words. In some cases, weak coherence is experienced in certain groups of individuals with ASD—it is not a universal trait.

Researchers such as Hoy, Hatton and Hare (2004) have criticized this theory in terms that using According to Natasja (2003), children with ASD can perceive blocks of an intact image faster than typical development children. Their minds are able to process information regarding the blocks, but they may fail to write a cognitive story from a series of linked images. This indicates that their coherence is existent, although biased.

Another perspective in the central coherence theory is offered by the work of Happe (1999). She hypothesises in her study that central coherence is a “cognitive style”, which varies from weak to strong; people with ASD also vary, but with their mean is towards the weaker level. I tend to agree with Happe’s research in explaining central coherence, and see it as a cognitive style rather than a deficit. People with ASD benefit from their strength in that they focus on details which can lead to better performance in tasks that require local processing. One can argue that the WCC prevents individuals from seeing the whole context. I believe that it does indeed, and it leads to delays in understanding social situations. Fortunately, interventions for children with autism have shown that when children are taught they can perform better in tasks requiring global processing. Yet, the methods of teaching need to take into consideration the children’s cognitive ability.

The teaching programme can include activities that are not chained together. The children are thereby required to develop meaning from simple activities rather than complex ones. In pronunciation activities, the use of simple words and phrases can help them learn and understand language. Involvement in simple games that have disengaged activities can enhance their social participation; likewise simple models used by the teacher can help them develop the ability to relate different
fragments of information in their environment. Involving activities that require paying attention to detail can help them nurture this ability and thus increase their participation. These children have the ability to observe important details, instead of merely the whole range of available information. In addition to the above, when planning the activities, the children will benefit from paying attention to facial expressions, emotions and other small details; this will in turn help them to recognise emotions and their social context. For example, in one activity, children were shown an emotion face and asked to choose the social content that they think caused the emotion. To perform well, one must present simple and immediate social situations that could lead to an emotion, then gradually move to more complex challenges.

2.5.6 Executive Function theory (EF)

The executive function refers to the person’s ability to plan and organise tasks, monitor performance, responding appropriately to change, inhibiting inappropriate responses and suppressing distracting stimuli. In other words, an executive act is any act towards one’s own behaviour that is aimed at modifying future outcomes for that individual (Meltzer, 2007). According to Frith (2003), EF is not required when doing routine actions or well-practiced skills. However it is a crucial ability for behaviour that does not follow a routine, or when a change of routine occurs. It is also an important skill for balancing more than one task simultaneously. Neuropsychology has a molecular view of EF; it encompasses actions of planning, sequencing actions, maintaining certain behaviours, and resisting interference. The mind controls verbal interaction, planning, and mental attention and some people argue that the frontal lobes of the brain control EF. EFs and self-regulation maximize social consequences related to certain behaviour. The individual requires some means to perceive and evaluate immediate outcomes. An individual visualizes herself and comes to be able to sense a hypothetical future from the experiences of the past. This creates mental representations of the viewed elements that serve as sources of self-control in the future. A person can also internalize self-speech. This allows for self-description and reflection, as well as invention of rules that govern someone
(Barkley, 2001). Development of executive function (EF) results from social interaction. Language is the most prominent tool in EF, and as these tools become more sophisticated, the mind becomes less reliant on the stimuli that cause thinking about them. Social interaction transmits cultural tools of language and related symbols that are engaged in executive control. Self-control is believed to emerge from reflection and deliberation of several responses. For example, children can be told to point to the box with few sweets to receive more. The box can be substituted - for example, using an elephant to symbolize more and a mouse to symbolize less. The children can be asked to point to the ones they want. This performance is sustained even when real sweets are introduced. This example indicates that symbols are a powerful tool for controlling the mind. When a child acts on an impulse, the caregiver reacts in a certain way. This reaction is internalized and the child assumes roles that are self-regulating. This self-regulation is important in maintaining a certain relationship with the caregiver. Teaching is an activity associated with social understanding and EF (Carlson, 2009) - an individual should have the ability to develop certain goals, plan actions, and carry out the plans effectively.

2.5.7 Critique of the EF theory and its relation to the current study

This theory has also received criticism from several researchers. In autism, executive impairments experienced can also occur as a result of other development disorders. It is hard to establish whether these EF impairments cause the disorder or appear later in the development process. The functions of the whole nervous system are mapped into a single anatomical location of the brain. This assumes that coherent functions must have a unitary anatomical location - the central system is considered as a unitary system, but it contains sub-systems that must also be considered. The frontal lobes represent a large area of the brain and might not function in unison. Executive processes involve links between different parts of the brain; therefore, they are not exclusively associated with the frontal lobes (Meltzer, 2010). Patients can have deficits in EF without seeing any damage to the frontal lobes. In some cases, patients with frontal lesions do not show loss of executive functions.
Children with ASD have difficulties in developing goals, making flexible changes in their plans, evaluating the outcome of previous plans, and so on. This is referred to as Executive Dysfunction (Frith, 2003, and Baron-Cohen, 2004), by which the children are not able to relate the outcomes of the past events to future events. A consequence is that keeping a plan in working memory becomes difficult. Children require the feeling that they are able to perform certain tasks, which is developed through both active participation and encouragement from the teacher. I used this theory in designing the current intervention programme. So, children will require all the procedures needed for working towards retention of activities and self-evaluation. In teaching the planned activities, the children require much praise to guarantee successful learning for the targeted skill, even when the results are not optimal. A rewarding system was thus devised in the intervention programme after each activity to encourage positive learning of a new skill.

Participants will learn how to control the sources of their shortcomings; active involvement enables them to form a sequence of small steps that will help them formulate goals in their life in more general terms. The designed programme sometimes involved them in making plans for the next games or activities. For example, a timetable was presented with all the activities at the beginning of each session - the same routine of sessions and breaks was used each time. At the end of each session children would have a follow-up task that helps them to achieve their goal.

2.5.8 The social learning theory

Social learning theory, which was later renamed social cognitive theory, theorises that behavioural change is affected by three factors: (a) environmental influences; (b) personal factors; (c) attributes of one’s behaviour (Bandura, 1997). In his book, Bandura explained the control beliefs concept and the fact that change of human behaviour requires individuals to believe that they have the capacity to perform the new action (self-efficacy). In addition, they must also believe that there is an incentive to do so (Bandura, 2001). Social learning theory builds on the principles of operant conditioning. In other words, the presence or absence of behaviour depends on the consequences of that behaviour.
Consequently, for social learning to exist, the individual must have an expectation that positive consequences of the behaviour will be greater than the negative consequences (Bandura, 2001).

Bandura’s theory builds on the basic concepts of traditional learning theory, but Bandura argues that direct reinforcement (like rats in a maze) could not account for all types of learning. Learning does not require an individual to personally experience the consequences of behaviour. One of Bandura’s distinct contributions was that people can learn from one another by observing, imitating and modelling. The new born child comes to the world, and then learns through observing and interacting with the environment. This theory added a social element to traditional learning theories: “most human behaviour is learned observationally through modelling; from observing others, one forms an idea of how new behaviours are performed, and on later occasions this coded information serves as a guide for action” (Bandura, 1997).

Social learning theory analyses human behaviour based on continuous reciprocal interaction between cognitive, behavioural, and environmental influences. The fundamentals of observational learning are:

“Attention, including modelled events (distinctiveness, effective valence, complexity, prevalence, functional value) and observer characteristics (sensory capacities, arousal level, perceptual set, past reinforcement);

Retention, including symbolic coding, cognitive organisation, symbolic rehearsal, motor rehearsal;

Motor reproduction, including physical capabilities, self-observation of reproduction, accuracy of feedback;

Motivation, including external, vicarious and self-reinforcement” (Culatta, 2011).

Using a variety of experimental studies, Bandura and his colleagues showed that children learn behaviour they see done by others (Bandura, 1997). For instance, when children observed an adult engaging in violent behaviour toward a similar doll, and were then given the opportunity to play with
a doll, they imitated the aggressive actions they had previously witnessed. Based on these studies, he identified 3 basic models of observational learning:

A live model - this allows the learner to observe a live individual engaging in a series of behaviours.

A verbal instructional model - this provides the learner with only verbal accounts and explanations of behaviour.

A symbolic model - this third variation exposes the learner to fictional or cartoon targets which display certain behaviours in books, films and television programs.

According to Rotter (1982), there are four components of social learning theory: “(a) behaviour potential, (b) expectancy, (c) reinforcement value, and (d) the psychological situation”. Behaviour potential is the behaviour that may be seen in a certain situation. At any given time, various types of behaviour might emerge, dependent on the circumstances. The likelihood of a particular behaviour will be the outcome, due to reinforcement of the behaviour that leads to the third component of the social learning theory (Rotter, 1982). Reinforcement value is the desirable outcome of behaviour due to the circumstances. In other words, things that an individual wants to happen have a high reinforcement value (Rotter, 1982). The fourth component of the social learning theory is the psychological situation. This is when an individual has to keep an open mind about other individuals; even though they may experience the same ordeal, they will exhibit different emotions and behaviours due to their environment and/or certain stimuli.

2.5.9 Social learning theory through the autism lens and its relevance to the current intervention

One area of impairment which children with ASD experience is the ability to imitate. They have difficulties imitating certain behaviours seen in their parents or teachers (Griffin, 2002). Imitation is seen as the first stage of an infant making a connection between the world of others and that of their own. A problem in recognizing and matching their movement to that of others results in impaired
social development. As explained by Bandura (1997), children observe the behaviour of others and start developing similar movements and expressions, as part of their learning process; this imitation can be blind or proper. For example, very young children can imitate lighting a bulb with their heads. However, they are not concerned with whether the bulb lights or not - this is called blind imitation. Older children can imitate the same action but they will check to see if the bulb lights - this is called proper imitation. Children with autism can succeed in such imitation. However, in gestural imitation, they totally fail. Children with ASD cannot imitate activities such as tongue protrusion or wiggling ears with both hands, as discussed by Miltzoff (1995) cited in Griffin (2002).

The social learning theory explains the reason for blind imitation in children with autism. Children with ASD lack the ability to observe a behaviour that is out of their interest. If they fail to understand the intuition of behaviour then they will fail to imitate it. Therefore, they fail to interact with other individuals in society, or participate in social activities. Goal emulation involves associating a particular behaviour with its outcome. For example when an individual does something and is rewarded, children associate that behaviour with the reward given. They tend to imitate such behaviour, hoping to receive a similar award. However, children with autism fail to develop goal-emulated behaviours. They fail to link the behaviour to the reward and might not develop that behaviour as a result (Griffin, 2002). Bandura points out that external reinforcement, e.g., rewards and encouraging words, are not the only factors which can influence learning and behaviour. He suggests that there is an element of “intrinsic reinforcement” which does not involve an external consequence (e.g., pride, satisfaction, and a sense of pleasure), that comes with achievement. This feeling is valued in its own right and does not require such a consequence. The central role of internal thoughts and cognitions in Bandura’s theory bridges the gap between traditional, behaviouristic learning and cognitive developmental theories. This emphasis on internal cognition led Bandura to label his analysis as a “social cognitive theory” (Bandura, 2001).

According to this theory, the child imitates parents, teachers, or peers. However, in certain cases, the child exhibits behaviour that does not match that of their role models. The children also fail to acquire
certain aspects of behaviour practiced by their parents or teachers. Children may become violent, even when their parents are gentle. Likewise, violent parents may also have gentle children. These differences in behaviour are not catered for by the social learning theory. Children with HFA develop (or lack) certain behaviours that are present in society, even though they have little interest in social interaction. They engage more with objects, but develop certain behaviours which cannot be attributed to social learning (Bushwick, 2001).

When planning this intervention programme, social cognitive theory was incorporated in various ways. The activities were designed so that the children were given opportunities to use all models of the observational learning theory such as acting and video modelling. They were able to observe the correct emotions that people produce and so understand them. Therefore, if children learn through observation, they will receive intrinsic rewards that derive from learning the skills, or simply the pleasure that comes from completing a task successfully. This design is consistent with the social learning theory. When children are asked in one of the activities to observe the researcher modelling an emotion in front of a mirror, they copy that expression. The researcher will verbally deliver an extrinsic reinforcement for this copying the correct expression. Further explanation of other types of rewards used will be seen in the next chapter (on designing the intervention programme).

2.5.10 The challenge of modelling for children with autism

Although modelling was briefly mentioned as part of the social learning theory, it is important to explain it thoroughly, for the sake of the intervention programme. Modelling can be defined as “a procedure whereby a sample of a given behaviour is presented to an individual and then the behaviour of that individual is assessed to determine if he/she engages in a similar behaviour” (Martin and Pear, 2002). A model demonstrates a behaviour pattern in a context where the observer/learner has access to cues, which he/she can in turn use to imitate (learn) the modelled behaviour. Thus, the stimulus provided by the model’s behaviour controls the observer’s imitation of the modelled response (Heflin and Alberto, 2001).
According to Martin and Pear (2002), modelling refers to presenting an individual with behaviour and assessing him/her to determine whether the behaviour has been acquired. A model demonstrates the required behaviour, so that the observer can imitate. As a child with autism tends to spend more time with objects rather than people, ways need to be designed to shift the attention of the children from objects to people. Social stories help these children develop social skills such as greeting people appropriately, sharing things with others, increasing frequency of play activities, and increasing social communication. These children learn how to interact with others and develop interest in social groups. However, they do face several challenges during modelling. They have little interest for activities involving social groups. They lack the platform to exercise these behaviours and the channels for learning them are limited. Modelling requires having characteristics that fall within the capabilities of the children. Their ability to imitate the models depends on how well they relate the behaviour to the objects they are used to. These children suffer from social disinterest and they may refrain from copying these social behaviours and lack the means to practice them (Frank and Kelly, 2008).

Presenting a live model that is instructed to interact with child during play can improve the child’s ability to interact with peers during play activities. Children with ASD have strong visual learning strengths, and they have the ability to imitate such behaviours quicker than normal children (Frank and Kelly, 2008).

In Frank and Kelly’s (2008) study, computer-presented stories and video models were used to develop communication skills in children with high-functioning autism. The children were required to watch videos, and their behaviour was assessed twice weekly. The results show that the model was effective in improving the social communication of the children. They were able to imitate the models in the videos to develop their own skills. Interventions presented via the computer are efficient modelling objects due to lack of interest for human activities by children with HFA. The children watched video tapes of models engaging in target behaviour to be imitated. The child learned to imitate and memorize these behaviours discretely. This modelling technique can be used to modify, change, or shape certain behaviours in children with HFA.
Key aspects of modelling when applied to children with autism

When modelling is applied to intervention programmes for children with autism, several aspects of the modelling are likely to contribute to its effectiveness:

The modelled behaviour must fall within the abilities of the observer. The observer may imitate the new behaviour - after the first exposure to modelling - only when the modelled behaviour is within a reasonable range of the observer’s current (pre-modelling) level of ability. If the observer has to imitate a rather complex behaviour (several steps ahead of his/her current abilities or demanding skills that he/she does not have), then the observer will not be able model the behaviour in the absence of rehearsal (Baldwin and Baldwin, 1986, cited in Kazdin, 2001).

Miltenberger (1997) concluded, in the behaviour modification techniques, that it is important that the observer is able to pay attention to the model’s behaviour. Otherwise the observer will not be able to display the behaviour. It is crucial that the child is focused and the teaching environment is free from distraction. For example, in a training session designed for children with autism, there are rules which must be followed in order for the child to observe and imitate the target behaviour. For example the child must stay seated, may need to keep his/her hands on a table, and must look at the modeller (Luce et al, 1996)).

Knowing the possible consequences of a modelled behaviour can help predict the influence it may have on the observer’s response. The consequences of the modelled behaviour functions as a discriminative cue that signifies similar consequences were an observer to imitate the model’s behaviour. In other words, if the behaviour being modelled has a satisfying result, it will likely be copied by the observer. Similarly, once the observer enacts the modelled behaviour, the consequences to the observer (if different from the consequences experienced by the model) may prevent the observer’s continued imitation of the behaviour. Ultimately, people tend to do what works and has positive consequences for them - irrespective of whether it worked for the model (Chance, 2009).
Reinforcements for attempts of imitating behaviour also seem to increase the likelihood of the observer repeating that action. Factors that affect reinforcement should be taken into consideration for successful modelling. For example, the reinforcement should be immediately positive and motivating. This is particularly so when the contexts and discriminative stimuli to those contexts are associated with the setting where reinforcement occurred in the past (Chance, 2009).

2.6 - Techniques used to develop the intervention programme

Techniques and tools that have been developed to teach emotions to children with HFA include face and emotion recognition, training using pictures, mind-reading tools, play therapy, social story books, board and card games and relationship development interventions.

2.6.1 - The “reading the mind” test

The human face is the major vehicle for the expression and communication of emotion. Most previous research has used faces as stimuli, displaying one of six emotions (sadness, happiness, anger, fear, surprise and disgust). Autism involves deficits in emotional recognition throughout life. But some HFA individuals can develop compensatory strategies, which help them to recognise basic emotions. The recognition of more complex emotions continues to be problematic. Despite these difficulties, an autistic person can show good (and sometimes excellent) systemising skills (Baron-Cohen, 2003). Systemising requires the person to analyse and build systems, and to understand and predict the behaviour of “non-agentive” events in terms of organising rules and regulations. “Let’s talk emotions” material was used in the researcher’s intervention programme - with some modification.

2.6.2 - Mind-reading computers

This technique can measure an individual’s thoughts by analysing facial expressions (LeClaire, 2006). These were developed using the research of Baron-Cohen (2006). A new programme - which teaches
emotion recognition skills for several socially important, complex emotions and mental states in a systematic way - was created and evaluated.

2.6.3 - Play therapy

According to Landreth (2002), play therapy is developmentally suited to elementary school children who need counselling intervention. Landreth illustrated that child-centred therapy is an active or interactive relationship between a child and trained therapist. The trained therapist is an expert in the play therapy procedures and provides materials and resources that will allow their relationship to become a safe and comfortable one, where the children can learn how to express themselves. Within the relationship, children can freely express their emotions, thoughts, experiences and behaviour by playing, which leads to maximised growth and development (Landreth, 2002). Child-centred group play therapy also allows the children to participate in a social process where they can learn more about themselves by interacting with other children, be more responsible, and be helpful towards one another in maintaining close inter-personal relationships (Landreth, 2002).

According to Ray and his colleagues (2005), therapeutic strategies allow the children to manage their distress and increase their adjustment. The effect revealed in their results is that it is harder for children in play therapy than for those children not receiving such treatments. They also found out that play therapy encourages children to control their levels of aggression, decreases their tendencies to initiate behavioural disturbances in school and improves their personality adjustment. Children are also found to be less anxious and insecure because they increase their self-concept through play therapy.

Another form of play therapy is video modelling, which would be apt for children diagnosed with AS or HFA. Video modelling is used as a means of applied behavioural analysis, which is considered the most effective method of eliminating unwanted behaviour, as well as of teaching new behaviours.

2.6.4 - Using social stories
As described earlier in this research (see chapter two), this is a method which was developed by Gray (1998). The stories centre around a variety of topics, such as happiness as a good feeling, learning to help others, how to give a hug, how to greet someone, smiling, and looking while listening (cited from www.asdvisualaids.com).

In addition to the above tools, different therapy and treatment programmes have been developed to help increase emotional understanding of autistic children. The parent-based Relationship Development programme is one such programme that was developed by Gutstein (2004). Relationship Development concentrates on core social problems (i.e., empathy, gaining friendship, being able to share experiences with others, and expressing love). The programme has workshops for parents and educators to train them in step-by-step exercises which then can be incorporated into the daily routines of the autistic children (Gutsein, 2004).

2.7 - Aims and objectives of the current intervention study

A cognitive behavioural training experimental programme will be administered to a group of children with high-functioning autism (HFA). The programme has the following objectives:

- Teaching children with HFA to understand the meaning of all emotions; identify them on themselves and mostly recognise emotions on others;
- Learning the concepts of different feelings and the social events/situations that enable a person to have an emotion;
- Understanding emotions that require appropriate responses from a person and empathising with him/her;
- Awareness of the impact of emotional understanding on social skills and social interaction with peers;
- Teaching children how to deal with negative feelings by teaching them problem-solving skills.
In summary the following are the aims of the current study:

- To evaluate the process of implementing the intervention programme that is based on the above mentioned objectives;
- To evaluate the outcomes of programme on the children’s level of emotional understanding and their social skills and interaction;
- To examine the background and experiences of two children involved in the intervention.

The researcher does not intend to teach children with HFA social skills, or manners, or to change their behaviours. In this study, six children (aged 7 to 11 years old) diagnosed previously with HFA or Asperger’s syndrome participated. Half were assigned to an experimental group and half to a control group. The experimental group received 10 sessions of training. Two children from the experimental group also acted as case studies. The researcher interviewed them, their parents and teachers.

**2.8 - Research questions**

The above review of the literature gave rise to the following questions:

**RQ1.** To what extent will an intervention programme, based on appropriate theory and research, help children with HFA to understand social emotions, and improve their related social skills?

**RQ2.** To what extent will such an intervention help children with HFA initiate positive social interaction and promote their emotional understanding and emotional behaviour?

**RQ 3.** To what extent can children with autism generalize the skills they learn, as a result of the intervention programme, to different situations?

The research centred at other sub-questions. The questions are examining the intervention programme and exploring the qualitative method. The research is designed to examine the following sub-question:
1. What kinds of difficulties in emotional understanding do the children with high-functioning autism in this study have?

2. What kinds of difficulties in social interaction and social skills do the children with high-functioning autism in this study have?

3. What are the similarities and differences between parents and teachers in how they describe children with HFA in terms of emotional understanding, social interaction and friendship?

4. How do participants describe their emotional understanding of others and their social interaction with others?

5. How can an intervention programme based on cognitive behaviour intervention enhance the emotional understanding to children with high-functioning autism in its four aspects (perception, expression, responding and understanding)?

6. How does a deficit of understanding emotions in children with HFA relate to their social skills?

7. What support services did children with HFA and their families receive?

2.9 - Hypotheses of the study

In the light of the aforementioned questions, the key hypotheses are the following:

**H1.** A cognitive-behavioural intervention designed to enhance social-emotional understanding will help children diagnosed with HFA to understand and recognise emotions and improve their social skills.
H2. A cognitive-behavioural intervention designed to strengthen emotional-social understanding will help children diagnosed with HFA to initiate positive social interaction and promote their emotional understanding as well as emotional behaviour.

2.10 - Conclusion

The above chapter sets the scene for the design and the evaluation of the cognitive behavioural intervention programme that aims to enhance the level of emotional understanding, and therefore social interaction, in children with high-functioning autism. An explanation of autism, its cause, diagnosis, treatments, interventions, associated impairments in social-emotional understanding as well as school provisions have all been presented. It also includes an explanation of policies and services regarding special education in the UK. The second part includes a review of the studies that focus on social skills and/or emotional understanding interventions for children with autism. The review also highlighted the limitations of the studies.

The next chapter will present the development of the intervention programme, followed by the methodology chapter.
Chapter 3 - Development of the intervention programme

3.1 - Introduction

From reviewing the autism diagnostic criteria in the second chapter, it has been established that children with high-functioning autism have impairments in social interaction and social communication. Among this pattern of impairment is emotional deficit. The role of education and training had many contributions to enhancing socio-emotional development. Children of typical development naturally learn the skills and knowledge required to function in society. Children with autism have the right to function in society, but they need the appropriate education to overcome their developmental barriers. This research has developed an intervention programme that aids the children to compensate for the emotional deficit. The programme is targeted to teach emotional functioning that children need for their social skills. It will be assumed that this emotional functioning has four major aspects - “expression, perception, responding, and understanding” (Begeer et al, 2008). When designing the intervention programme, these four aspects were taken into consideration. This chapter describe the four aspects of emotions, previous programmes and approaches, the objectives of the current programme, principles of teaching, procedures, types of intervention approach, recording progress, and detailed description of sessions.

3.2 - The four aspects of emotions

Emotional competence is a very important skill for children, as emotions are the primary modes of communication which allow them to form social relations with other people. Research shows that children with autism, unlike their typically developing peers have profound emotional impairments, which cause them to have difficulties in forming affective social contacts (Beeger et al, 2008 and Bauminger and Kasari, 2002). Fundamentally, this means that children with high-functioning autism are unable to forge meaningful social relations due to their inability to express, perceive, understand and respond to their own emotions and those of others.

1. Expressing emotions
Emotional expression is one of the key aspect necessary for the formation of social relationships. The way a person expresses their emotions, according to Beeger et al (2008) determines the reaction that they will get form the environment. Oster (2003) described that babies who are a few months old are able to express recognizable emotions such as joy, disgust, anger, and sadness. By the time the child is of school age, they are able to explain and regulate their emotional expressions (Kieras et al, 2005). Unlike other children with other developmental deficits, such as ADHD, children with ASD have been found to be almost as expressive as their typically developing peers. These children have the ability to talk about their own feelings based on personal experiences. Nonetheless, awareness of personal emotions still remains problematic for these children as they are often unable to integrate their emotions in social settings (Downs and Smith, 2004 and Begeer et al ,2006).

2. Perceiving emotions

Non-verbal communication is often common during social interactions, whereby people can use their facial expressions and other gestures to communicate with their environment. In the absence of verbal communication, facial expressions are the most commonly used form of communication since these expressions are easy to perceive. According to Begeer et al (2006), typically developing infants are able to perceive facial expressions from a very early age and this ability continues to improve as they grow older. Evidence shows that ASD children are impaired in as far as facial identity and recognition of facial expressions is concerned.

Although these children are able to see various facial expressions, they are unable to make meaningful meanings from these expressions. This condition, according to Happe & Frith (2006) is referred to as “weak central coherence”, which inhibits the ability to perceive facial stimuli and later convert the perception into coherent information. Accordingly, these children take longer to respond to emotions based on facial expressions as they are often unable to act on what those expressions mean, or due to a failure to perceive those emotions all together. Children with high-functioning autism have mostly fail to identify complex emotions such as embarrassment and pride, when those emotions are facially displayed (Hobson, 1986, Baron-Cohen 1995). It has also been reported that these children tend to
focus more on the mouth; rather than the eyes during information gathering (Beeger et al, 2008). Therefore, even in class these children may only focus on one facial feature and fail to perceive all the emotions expressed by the other features.

3. Responding to the emotions of others

In order for a person to have meaningful social interactions, s/he needs to have the ability to recognize and respond appropriately to the emotions expressed by other people. For children, this is manifest when infants are able to smile back at smiling faces, or to cry when someone makes an angry face. Accordingly, a child who is a few years old is able to judge the display of emotions by, for example, their caregivers and act accordingly. However, for children with autism, responding to the emotions of others has to be prompted by a third party (Rieffe et al, 2005). These children are often confused by the emotions displayed by others, thus making them unable to respond to these emotions, particularly using verbal communication.

Generally, the empathic level among these children are low and need to included in teaching programmes. According to Rieffe et al, (2000) these children often respond to the emotions of others by copying the responses given by another person, or when given instructions on how to respond. This inability has to do with poor reflex bases which do not allow for spontaneity when responding to the emotions of others. A deficit of empathy was explained earlier in this study under the TOM (see chapter two).

4. Understanding emotions

Emotional understanding is important in helping a person recognize what actions draw out what emotions. According to Rieffe et al (2005) children as young as three years are able to understand emotions and differentiate between simultaneously occurring emotions. For example, a three year old child is able to differentiate between a sad person and an angry person. This understanding of mental states and emotional representations and differentiation is known as “theory of mind”. It is of interest to note that school aged children with high-functioning autism are often able to identify and
understand simple emotions that occur independently (Rieffe et al, 2007; Baron-Cohen et al, 1985; Baron-Cohen, 1995). They are also able to understand the effects that such emotions can have on their behaviour. The problem arises when these children are faced with multiple emotions occurring simultaneously. For example, children may find it hard to understand a person who is feeling sad and angry at the same time. Basically these children have a low TOM capability, which causes them to have difficulties in imagining and understanding the mental states of others, when inference is based on emotions.

Summarily, the intervention programme was designed drawing on the above aspects. Its teaching methods and techniques were directed to teach children aspects of emotions that they cannot learn easily. There are several ways that incorporating teaching emotions Losh & Capps (2006) explained. They added that ASD children usually think in pictures. Accordingly, in order to improve the emotional competencies of these children, they can be encouraged to use pictures to depict emotions. To aid in the expression of emotions, they can be encouraged to keep journals in which they record their emotions routinely. According to research, children who normally record their feelings in journals are more capable of managing their emotions than those who are accustomed to emotional outbursts (Cardon, 2004). Moyes (2001) proposes the use of picture cards containing different facial expressions. In reference to responding to the emotions of others, the children can be given picture containing emotions, then asked to think of situations that might cause this emotion, and think of what responses they would give to a person exhibiting such emotions (Bellini, 2008). Role-playing can also help in emotional understanding, where the children and their peers imagine situations and express corresponding feelings.

3.3 - Previous programmes and approaches in autism

Whether it is in a mainstream setting or a special educational classroom, children with autism need educational programmes that meet their needs. There is a consensus that there is no single educational
approach that will suit every child with autism, but there are important factors that make any intervention programme successful. As reviewed by the autism education trust (Jones and others, 2008), the programme has to include these factors:

- “Be based on individual assessment;
- Involve parents/carers;
- Be behavioural;
- Focus on social understanding and communication;
- Be developmental and structured.”

There were several theories and approaches taken into consideration when the intervention programme was planned. As summarised in chapter two, they are as follows:

- The activities were designed in a way so that the children were stimulated using all models of the observational learning theory;
- Based on theory of mind (TOM), the activities aim to teaching children to read other’s emotions;
- The activities were designed to teach children to empathise using the cognitive (i.e., interpreting mental states of one’s self and others) and the appropriate emotional reaction elements;
- Modelling as part of the social learning theory was administered through demonstrating the emotions to children through live or video modelling;
- Play therapy was used in designing the activities, through acting games and scripts;
- Reading the mind through gazing at the face was adapted through computer-based intervention and interactive games.

The activities designed in the intervention programme are described in this chapter. Below is a summary table of how the theories were incorporated into the sessions.
<table>
<thead>
<tr>
<th>Session</th>
<th>Model</th>
<th>Used as</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Symbolic</td>
<td>Robbie the rabbit</td>
</tr>
<tr>
<td>1</td>
<td>Verbal instrumental</td>
<td>Happy to meet you, sad to leave you</td>
</tr>
<tr>
<td>1</td>
<td>TOM</td>
<td>Identify simple emotions, and match the emotions</td>
</tr>
<tr>
<td>2</td>
<td>Verbal instrumental /symbolic and video modelling</td>
<td>The feeling game</td>
</tr>
<tr>
<td>3</td>
<td>Modelling</td>
<td>Matching and acting simple and complex emotions</td>
</tr>
<tr>
<td>3</td>
<td>TOM</td>
<td>Emotions hunt</td>
</tr>
<tr>
<td>3</td>
<td>Modelling</td>
<td>Mirror and camera</td>
</tr>
<tr>
<td>4</td>
<td>Symbolic</td>
<td>Emotions transporter video</td>
</tr>
<tr>
<td>4</td>
<td>Live</td>
<td>Act and guess</td>
</tr>
<tr>
<td>5</td>
<td>Verbal Instrumental</td>
<td>Listen to voices</td>
</tr>
<tr>
<td>5</td>
<td>Verbal Instrumental</td>
<td>Guess the feeling through my voice</td>
</tr>
<tr>
<td>6</td>
<td>Modelling</td>
<td>Interview role play</td>
</tr>
<tr>
<td>7</td>
<td>Modelling</td>
<td>Role play script</td>
</tr>
<tr>
<td>7</td>
<td>TOM</td>
<td>Guess the feeling from desire, guess the feeling from situation</td>
</tr>
<tr>
<td>8</td>
<td>Modelling</td>
<td>Building relationships</td>
</tr>
<tr>
<td>9</td>
<td>Modelling</td>
<td>Role play script</td>
</tr>
<tr>
<td>10</td>
<td>Symbolic</td>
<td>Mr. Face and the dictionary game</td>
</tr>
<tr>
<td>10</td>
<td>TOM</td>
<td>Guess the emotion</td>
</tr>
</tbody>
</table>

The exploration of the research of video modelling in literature was necessary for parts of the experimental programme, and it was incorporated into the sessions. However, in these sessions, the researcher did not use live models in her videos, as it was felt that the children would relate more to symbolic models, given their age.
Table 13: A summary of sessions using video modelling

<table>
<thead>
<tr>
<th>Session</th>
<th>Video modelling used</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>The feeling game</td>
</tr>
<tr>
<td>3</td>
<td>Body language teaching</td>
</tr>
<tr>
<td>4</td>
<td>Emotion transporter video</td>
</tr>
<tr>
<td>5</td>
<td>Emotion transporter video</td>
</tr>
</tbody>
</table>

The researcher reviewed other commercial materials that are based on the relevant theories to design activities that will teach children emotional functions. Below are descriptions of materials used in designing the programme:

- “Let’s talk emotions” is a collection of activities that could be used by professionals to teach individuals with social cognitive deficit to strengthen “intellectual empathy” and personal identification and expression of feelings (Cardon, 2004). The current researcher adapted some activities and used them in teaching.
- The “feelings” cards are a collection of coloured cards that illustrate a big range of feelings in children and adults to be used in teaching children to understand their own feelings and the feelings of others, and to learn how to respond in different situations (available from Speechmark Publishing, 2009). The researcher used several of these cards in the programme.
- Mr. Face is a wall chart that has detachable pieces to create different expressions. It is designed to help children identify the different facial features and place them correctly on the outline (available from www.winslow-cat.com). This wall chart was used in two activities in the programme.
- “Teaching Children with Autism to Mind-read” is a practical guide that was based on a study reviewed in the literature chapter (see chapter two). It teaches children with autism to read emotions, beliefs and pretence through recognising facial expressions on photographs and facial cartoons. Children look at these photos then answer emotion-based questions. It contained five levels of mental state teaching (level one is recognising simple emotions; level two is complex emotions; level three is situation-based emotions (i.e., seeing leads to knowing); level four is desire-based emotions and level five is belief-based emotions, i.e.,
false belief (Howlin, Baron-Cohen and Hadwin, 1999). The current researcher taught recognition of facial expressions from the photographs and the drawings used in the guide.

- The emotion transporter is a DVD that is based on the theory of mind, and was evaluated in the Autism Research Centre in Cambridge University. A study was done over 20 children in the autism spectrum, aged 4 to 8, who watched the DVD for 15 minutes a day for 4 weeks, and a control group who did not watch it. The result was that the transporter DVD was an effective way of teaching emotional recognition. Children increased their emotional vocabulary and were able to generalise the emotions they learned into novel faces and unfamiliar situations. Children who did not watch the transporter DVD remained below the typical development level in children. The DVD contains eight characters, which are animated vehicles with real human faces. They have their own personalities and functions. The train characters and their owner Jamie go off to school in the morning and we see their daily lives. A narrator helps children to focus on the facial expressions. At the end of each episode, there is an interactive game that has questions about what each character was feeling and why (Golan et al, 2009).

The current research used this DVD, as children with ASD are fascinated by trains. Such films allow the children to systemise their thoughts and follow certain rules. Another reason for using this method is that it is a type of modelling. Children will look at how emotions and different faces express emotions.

### 3.4 - The development of the intervention programme

After reviewing the literature and intervention approaches in chapter two, the researcher decided to focus on teaching emotions in four aspects (expression, perception, responding, and understanding) to children diagnosed with high-functioning autism. The researcher believes that to overcome the social and emotional difficulties in children with autism it is important to adopt a comprehensive approach for teaching children about recognising, expressing and responding to emotions, as well as understanding the social context. This approach is called the multi-model approach, as it uses several intervention models. There is evidence reviewed in the literature (see chapter two) that supports the effectiveness of this approach, e.g., (Spence 1995 and Spence 2003). Teaching emotions in this way is
far beyond teaching children to identify emotions through pictures, as used in previous studies. The teaching needs to take into consideration the complications of autism and the individuality of each child. The intervention programme is an intensive programme, conducted over 5 weeks, for a total of 10 sessions. One of the goals is to design a programme that can be incorporated into any intervention approach. Children that are in a mainstream setting should be able to use it as readily as those in special schools; therefore it is important to use activities and materials that are available in both educational settings. One major limitation in previous programmes is that children could learn in the teaching setting but fail to generalise the skills learned into their daily lives. The programme would avoid this problem, by teaching the principles of emotional understanding such as focusing on facial features, vocal tone, body language and social situations using a wide range of training techniques and activities. Examples include direct teaching, acting and role play, computer-based intervention, recognising emotions through drawing pictures and real human faces, and other activities that are explained in this chapter.

Another way of measuring the effectiveness of the intervention programme is the outcomes of the measures. The measures covers the home and school environment, therefore if there is a change in the children’s social interaction and emotional understanding, this could be an indication that the children were able to transfer the skills they learned in the intervention setting to the home and school setting.

The programme is also aimed to teach the different social elements that would trigger a feeling in a person. The researcher believed that, by teaching children with high-functioning autism these elements, they would then be able to enhance their social skills.

Finally, it is designed to link the children’s learning to real-life situations, and thereby help them to relate to their emotions better. The take-home activities were aimed to help the children to continue with their learning curve between the sessions and to help them handle negative feelings.

3.4.1 - Objectives of the intervention programme
As established in the literature review, children with high-functioning autism are known to be deficient in understanding the emotional and mental statues of others, which plays a significant role in their social skills and communication difficulties. As reviewed in chapter two, this defect is seen in their difficulties in recognising simple and complex emotions (Hobson, 1986, Baron-Cohen 1995), difficulties in interpreting facial expression from facial features (Baron-Cohen, 2001), an inability to connect with others state of mind and therefore a lack of ability to empathise (Roeyers et al., 2001 and Yrmiya et al., 1992), and a delay in linking emotions to social situations (Hurdy, 2009 and Baron-Cohen 1999). With respect to these difficulties that characterise children with high-functioning autism, the current intervention programme has the following objectives:

- Create a relationship between the researcher and the children, and among the children themselves, to facilitate interaction;
- Teach the importance of obtaining one’s attention before speaking;
- Recognise simple emotions such as happy, sad, angry, and afraid/scared;
- Recognise and express emotions through facial expression, tone of voice, and body language.
- Recognise complex emotions such as confused, embarrassed, surprised, bored, and worried;
- Recognise the different degrees of the aforementioned emotions.
- Increase the ability to identify the aforementioned emotions in different social situations, and thereby learn the relationship between events, as causes, and corresponding emotions, as results;
- Learn different strategies to control negative feelings such as anger, sadness and pain;
- Improve their ability to empathise;
- Link the emotions taught in sessions with social relationships.

3.4.2 - The principles of teaching

The researcher searched the most common teaching principles used to teach children with autism, particularly high-functioning autism. The most common one is Applied Behaviour Analysis (ABA) which is a type of one-on-one therapy that uses an intensive and structured teaching programme. This relies on behavioural modification to present different skills to the autistic child. The major principles that shape the ABA are functional communication training, incidental teaching, script/script fading,
self-management, shaping, behaviour chaining, errorless learning, functional assessment, reinforcement systems and activity schedules (Cardone, 2007). Another programme is conducting mind-reading training by (Howlin et al., 1999). The main principle was teaching children to mind read fief levels. The task first starts with recognising simple emotions, then gradually moves on, as the children accomplish the task to a higher level. This principle of teaching also agrees with the stage of socialization set by Cotugno (2009). In order to improve empathy to others, teaching has to start with learning emotional recognition, then move to learning body language, then the situations and social cues until children are able to behave in an appropriate manner with others.

The researcher reviewed the well-established intervention programme to adapt the following teaching principles:

- Teaching needs to be gradual. The intervention programme starts with activities that help to acquire simple skills first, such as recognising simple emotions, and then gradually builds up to understand skills that are more complex over the sessions - such as complex emotions, social situations and empathetic response.
- Take into account the child’s normal environment, individual skills and interests. This was accomplished from the information sheet and the assessment collected prior the intervention.
- Use systematic reinforcement to increase rapid learning. As reviewed in the social learning theory (see chapter 2), this has a great value in learning especially if the reinforcement matches what an individual desires.
- Guide the children to observe others’ emotions, both in and outside of the setting. As mentioned in the observation theory this principle will be used in the three basic models (live, verbal instruction, and symbolic models). Also the researcher gave children activities to practice at home, and reviewed them during the next session.
- When teaching about negative emotions (e.g., sad, angry, and embarrassed), allow children to accept such emotions and think of ways to help themselves cope.
- Ensure errorless learning (i.e., avoid the chances of making mistakes), by slowing the speed of the activities, then gradually increase. Also always reinforce correct answers during training, and if the child makes a mistake quickly prompt the correct one.
- Always link their understanding of feelings and emotions during lessons to their relationship with friends and family.
As required throughout the activities, the researcher will always use prompting by demonstrating, using stimulating pictures or suggesting ideas.

Researcher records the progress of each session, focusing on the children’s understanding of the activities, interaction level, positive and negative behaviour, strengths and weaknesses, and any special achievements.

3.4.3 - Programme procedures

The researcher met the parents individually and gave them an individual profile sheet about the child. It contained the following information: name, age, date of birth, school, school year, birth order, siblings, parents’/guardians’ names, address, contact number (home and mobile), e-mail, parents’ occupations, child diagnosis, date of diagnosis, statement, type of support the child receives both in and out of school, diet restrictions, favourite rewards, and favourite snack.

Prior to the sessions, the researcher met each child individually and briefed them on the expected activities.

At the beginning of each session, the researcher wrote all the activities on a board and read them to the children when they arrived to enable them to be prepared.

The researcher rewarded the children according to the child’s preferred snack/reward. Information obtained from the parents.

The researcher prepared two extra activities per session in preparation for any change of mood of the child.

Children were allowed 5 to 10 minutes’ snack break after 35 to 40 minutes from the starting time.

They always started with more “fun and relaxed” activities after the break to ease the children into the rest of the session, e.g., pc games, video.

Children were given a folder with his/her name for home activities and a pocket to collect rewards.
At the beginning of each activity, the researcher would call out the children’s name and ask them to pay attention, then in a clear voice and simple words, she described the activity or the game.

3.4.4 - Type of intervention approach

The experimental group consists of three children. Since all the children share similar diagnoses and age range, a small group format was chosen, with the three children serving as one group, and the researcher delivering the teaching. The small group format allows the researcher to meet the needs of the individuals as well as the goals of the activities (Cotugan, 2009). With such a small group, it is possible to give close attention to specific individual needs and gradually join these with the group’s main goals for the particular activity.

Many of the studies demonstrated that this study’s targeted skills can be improved in children with high-functioning autism. However, this improvement may be confined to those skills that are directly and explicitly taught (White et al., 2007). Direct teaching was administered throughout some activities alongside other methods, where children received instruction about the activity procedures and roles. The other approach used was indirect teaching in activities that did not require the child to give a specific response. Children learn from observing the researcher deliver a specific skill and may share a group discussion. It is useful to increase creativity and help to develop problem-solving (Cotugan, 2009).

3.4.5 - Rewarding system

The following were the most preferred rewards, as obtained from the parents: extra time on the computer, video games, reward chart, little prizes, and a certificate for good work.

Verbal rewards would be delivered after each time a child answered correctly. Sentences such as “yes; that is right; well done; you are correct and very good” would be used.
After each activity, each child got a tick next to his/her name on a reward chart for cooperation, listening, and interacting appropriately during the activity. At the end of each session, the children got to pick a prize from a box. There were high demands on computer games from the children, therefore with the parents’ cooperation and permission, the children were allowed to stay 15 minutes after completing all the activities to play computer games.

3.4.6 - Recording the progress of the sessions

Two methods were used to record and monitor the progress of each session and each activity.

3.4.6.1 - Progress report

The researcher reviewed the available recording forms:

- the emotional understanding record form from teaching the children to mind-read (Hawlin et al., 1999);
- Group interventions (Cotugano, 2009);
- Teacher vision forum (www.teachervision.fen.com/school-forms/resource/);

A simple progress record form was set by the researcher to record the general layout of sessions, a child’s understanding of the activities, strengths and weaknesses of the child, and special achievement. The progress report was completed at the end of each session by the researcher.

The form was designed as follows:

- **Session number:**
- **Activities:**
- **Progress:** Focused on monitoring the children’s progress. It could contain the following: active engagement, passive engagement, social interaction with teacher, social interaction with other children, out of seat, verbal response, raising of hand, response to teacher, response to activity, appropriate response (all the time, most of the times, rarely), or child did not respond.
• **Expected result**: Focused on the children’s ability to learn the targeted skills and respond positively in each activity and the impact of teaching the sessions on the children’s interaction with each other.

• **Additional work**: Focused on things needing to be added or emphasised more next session. Also on what could be done to improve the intervention programme.

3.4.6.2 - Children’s response observation

All observations were direct, and in a group setting, for the purpose of recording the children’s progress in the targeted areas.

The setting of the activities did not allow space to make notes about individual children, in that the researcher was delivering the teaching to children herself. For those reasons, the researcher used another person to do in-depth observation. A research assistant was present throughout the 10 activities. (the role of the research assistant is explained in the methodology chapter). Using a simple form that had been designed previously by the researcher, the observer recorded the responses at the end of each activity.

The major thing to be monitored was the children’s ability to learn the skills taught in each activity. Each activity was designed to teach a target skill that is expected to fulfil at least one goal for this intervention programme. It was measured through the child’s giving correct answers, suggestions, or any correct verbal comments. The observer recorded if the child needed prompting or modelling by the researcher.

The observer recorded a code in the form to indicate the child’s response. The responses could comprise of the following: verbal response, physical response, response to teacher’s question, applying the required task, correct response, incorrect response, child not responding, and response with prompting. Also the observer recorded the type of prompting needed.

Each child was observed through a combined form that is easy for the observer to administer. The responses could be recorded repeatedly, depending on the activity.
The progress observation form was designed as follows:

- Session number:
- Activities:
- Mark each response with: + (correct, unprompted), - (incorrect), NR (no response), or P (prompt). If a prompt is delivered, record the appropriate prompt code in the field marked “Prompt”.
- Prompt key: V (verbal), M (modelling), Ph (physical). Physical prompting was through holding a child’s hand to do an activity.

Table 14: Children’s responses observation

<table>
<thead>
<tr>
<th>Child</th>
<th>Activity 1</th>
<th>Activity 2</th>
<th>Activity 3</th>
<th>Activity 4</th>
<th>Activity 5</th>
<th>Activity 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freddie</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oliver</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jack</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.5 - Sessions

3.5.1 - Session 1

Objectives:

- Create a relationship between the researcher and the children, as well as among the children themselves to facilitate information exchange;
- Learn the importance of obtaining one’s attention before speaking;
- Recognise emotions through facial expression;
- Recognise simple emotions such as happy, sad, angry and afraid.
Time: 60 min

Procedures:

Getting to know each other:

Researcher wrote the following six questions on the board:

- What is your name?
- How old are you?
- What is your hobby?
- What is your favourite subject in school
- Do you have brothers or sisters?
- Do you have a pet? (What kind?)

She then answered these questions herself and added 3 more facts about herself. It was then the children’s turn to answer the six questions. The researcher asked them to add 3-5 extra facts, while the researcher wrote their details on the board. They then came up to the front of the class, and shook hands with the researcher, and with each other saying, “Nice to meet you” and “Nice to meet you too”.

Each child’s name was written on a tag and stuck to their shirts. The researcher then summarised the purpose and procedures of the session to assure the children.

Identify simple emotions:

As mentioned in the literature review, children with autism, particularly high-functioning autism, are able to pass simple emotion tests. The researcher needed a starting point for the children’s level of emotional understanding. Therefore, the first session focused on testing the sample children’s ability. The photos used in teaching this activity were adapted from the Teaching Children with Autism to Mind-read guide book (Howlin, 1999).
1. Researcher introduced the children to four black and white photos of people with happy/sad/angry/afraid expressions. The cards were placed in front of each child and asked, “Can you point to happy/sad/angry/afraid?”

They were directed of the need to look at the eyes, mouth, eyebrows, and forehead. These would enable the children to identify the correct emotion. This was repeated until all children managed to get all four emotions right.

![Figure 1: Photographic facial expressions of emotion](image)

2. The researcher presented four-cartoon drawings of happy/sad/angry/afraid expressions to each child and asked, “Can you point to happy/sad/angry/afraid?”

![Figure 2: Cartoon facial expression of emotion](image)
Many autistic children find mechanical objects engaging, and by combining this with a real human face, the aim is for the child to practice identifying emotions in a non-confrontational environment which they enjoy. As children with autism enjoy the use of computers, the researcher used this method to teach children simple emotions. The robot is a symbolic method of teaching emotions.

Robbie the Robot teaches children about correctly identifying the right facial expressions to match different emotions. The game integrates 3D animations and a real person’s face, to show the emotion that the character is feeling. Robbie the Robot is a mechanical character on a journey to find his missing hat. The game reinforces the following keywords: ‘happy’, ‘sad’, ‘angry’ and ‘surprised’. This is completed by having the game on the computer and giving each child control of the mouse and choice of the appropriate answer. Each child had 3 turns. When children click the right choice, there is a celebratory cheering noise. If they don’t get the correct answer, a cross appears over the wrong one and a repeated attempt is allowed, until the child gets the right answer. It also teaches the children to link the emotion to situations. By following his journey, he goes through different events and situations that cause him to have certain emotions.(retrieved from www.whizkidgames.com).
Match the emotions:

The researcher designed this activity in two parts. In the first section, the researcher asked the children to match the set of photos of real people from the second activity to the set of cartoons. Each child was given eight photos that contained two matching expressions - one drawn, and one black and white photograph, each with happy, sad, angry, and afraid emotions. The second part involved using new novel photos. Presenting new photos supports generalisation. Two sets of facial expressions were placed face down in front of the children. They were asked to choose one from each set, turn them over and find the matching emotions. If it was correct, he/she was asked to verbalise the depicted emotion.

Happy to meet you/sad to leave you:

This is simple verbal game to teach emotions. A story is told by a flashcard depicting a happy face. The researcher told the children that she was happy, because she met them and that she has had lots of fun being with them.
With the second flashcard - a sad face - the researcher told the children that she was sad for having to leave them, since the time is up for the session. The third flash card with another happy face was used to tell them, “I am, however, happy because I will meet you next session” and they were bade goodbye.

Home activity:

Children were asked to bring from home various photos taken from magazines, the Internet or their family album that contain the four simple emotions learned in the session. Then when they next meet, they would be asked to identify each emotion and match them with the original four cards (see appendix 1).

3.5.2 - Session 2

Objective:

- Recognise simple emotions - happy, sad, angry, and afraid - of others and ourselves;
- Recognise complex emotions (surprised, shy, proud, confused, disgusted);
- Learn the cues in facial features to identify different emotions;
- To help strengthen personal identification and expression of feelings.

Time: 60 min

Home activity follow-up:

The researcher reviewed the home activity with each child in turn. She asked the following questions about each picture:

What is the person in the picture feeling? How did you know? They were prompted to observe clues in eyes, eyebrows, mouth and other body language if presented.
The feeling game:

This is a software game on the computer (retrieved from http://do2learn.com/games/feelingsgame). First, the children got to choose how they would like to view the faces. The game has a girl, a woman, a man, and other faces of people. At one given time, the game showed three pictures of different feelings. The children were asked, “Who is sad, happy, angry, disgusted, ashamed, afraid, interested, and surprised?”

The children took five turns on the computer to play the game. This game introduces more complex, but still the most common expressions. Each time a new emotion was presented (other than the four simple expressions from Session 1), the researcher asked the children to observe the clues in the facial features and head position to learn the difference between each expression. The next level of the game showed an emotion, followed by a question of how that person feels, with 3 choices of answer.

Definition:

This activity was designed by the researcher. The researcher put two sets of cards on the table: emotions cards that contain the words, ‘Happy, Sad, Angry, Scared, Confused, Embarrassed, Surprised, Bored, and Worried’, and photo cards of people expressing said emotions. She then asked the children to take turns and choose a word card.

Once a card had been chosen, the child was asked to read the word aloud, and then say what he/she understands by it. They would then bring a dictionary to read the definition of each emotion, and match the word with a photo that described it. Then the researcher took every photo, showed it to all the children, and described the emotion, for example, “this boy is confused, this girl is surprised.”

Break

Mr. Face:
This is an educational wall-hanging game, that was explained at the beginning of this chapter. It has a face in the middle and detachable pieces of eyes, mouths, eyebrows and noses (available from www.winslow-cat.com - educational tools).

The researcher asked the children to make happy, angry, sad, surprised, scared, shy, proud and confused expressions. Each time a child made an expression on Mr. Face, the researcher explained the different facial features, and how we can place them correctly on the outline.

Figure 4: Mr. Face

In the second part of the game, the researcher asked the children, “Can you create an expression on Mr. Face to match the following?” Then she read different situations:

- Mr. Face is going to the funfair;
- Mr. Face lost his favourite book;
- Mr. Face got all the questions in the quiz correct;
- Mr. Face has some very difficult questions to answer;
- Someone ruined Mr. Face’s artwork;
Mr. Face was chased by a dog;
Mr. Face accidentally broke his friend’s glasses;
Mr. Face found 5 pounds;

The children took three turns each, and then the final part is that the children are given the opportunity to create their own version of emotions and silly faces. (See figure 4).

Home activity:

Four simple emotions were presented (happy, sad, angry, and scared) then children were asked to say:

I have felt...........when............................................

I noticed someone felt..........when.................................

This was repeated for all the four emotions (see appendix 2).

3.4.3 - Session 3

Objective:

- Identify simple and complex emotions through facial expressions and body language;
- Discover how every part of the face can be used to express emotions;
- Practice illustrating various expressions of emotions.

Time: 60 min

Home activity feedback:

During the first 10 minutes of this session, the researcher reviewed the home activities with the children and reinforced the learning with each child.

Matching and acting simple and complex emotions:

The researcher designed this activity to teach the children to match and act out emotions. The researcher provided two sets of matching drawn cards of the following expressions: happy, sad, angry,
afraid, surprise, shy, proud, confused, bored and nervous. Two cards were added with the following sentence: ‘talk about a time when you felt this emotion’.

The researcher shuffled the cards and placed them in front of the children, face down. Each child was told to draw a card, look at it without showing it to the group then draw another one. If the two expressions matched, he/she was to act the expression and the other children would guess it. When the children struggled to guess, the researcher prompted them to remember to look at his/her eyes, eyebrows, mouth, hands and any other clues. The two matching cards were then removed. If a child drew an emotion card with the sentence card, he/she would be encouraged to speak about his/her experience of feeling this emotion. Each child had four attempts.

**Paper plate faces:**

This was a handcrafting activity (adapted from “Let’s talk emotions”, Cardon, 2004), where paper plates, different colours, glue, and sticks were used. Boxes, which had cut-outs in the shape of eyes, eyebrows, different mouths, nose and ears were placed in front of the children. The researcher asked the children to make his/her own face according to the pattern in front of them. After a child finished this handcraft, they were then asked to guess the emotion, which they wrote on the back of their work. During this activity, the researcher continued to show them how emotions change with facial features. For example, to talk about sad, turn the smile upside down and verbalise the action of “making a frown” then angle the eyebrows downwards to depict the sad face and say, “The eyebrows frown too.” Also, point out which features change to indicate the target emotion.

**Break (if needed)**

**Emotions hunt**

The researcher designed this interactive activity that combined all the emotions learned in the previous activities, using various photos of real people. This new set of photos was used to encourage generalisation. Children were given a magnifying glass and had to pretend to be detectives and look
for emotions. The researcher taped various photos around the room then gave each child a list of emotions. The order of this list was different for each child, and they were to identify all the emotions in their lists, then gather the cards and sit in one group to discuss what clues they found in each photo to identify the correct emotion.

**Mirror and camera**

This activity is based on the modelling theory and play pretend approach. It is adapted, with some changes; from *let’s talk emotions* (Cardon, 2004).

The researcher brought a long mirror, a camera and a collection of emotion words - not pictures. The emotion cards were placed in front of the children face down. Children were to take 3 turns each and choose a card; they then acted out the emotion in front of the mirror, while the others guessed what the emotion was supposed to be. Pictures of them were taken and placed in a book with the emotion being labelled. This book was to be used in the later session.

**Body language**

The researcher chose a TV programme, with which the children were unlikely to be familiar. Some clips were selected, where different characters were showing different emotions such as anger, sadness or fear. The volume was turned off. The idea was for the children to watch the clip and think about: (a) what is happening, and (b) what emotion the characters are feeling. The principle was to teach the children to look for different clues in body language and facial expressions, but also to correlate emotions with social situations through the scenes.

After each clip, the children were allowed to discuss among themselves, and the clip was played again with the volume on. This time children were encouraged to listen to the dialogue and watch the body language.
Discussion was encouraged to see if they were right in guessing the emotions the first time, now that they were able to hear the conversation too. The researcher then asked the children to imitate different body languages shown in the clips so they know what the different body languages ‘feel’ like.

Home activity

The researcher gave each child a disposable camera, a magnifying glass, and a list of emotions to take home. They were told to be a photographer for the week and observe people’s reactions, and to take photos of friends and family members experiencing and portraying various emotions - whether real or acted out. This would allow the children to elaborate on what they have learned and be able to take the skills into their social life.

3.5.4 - Session 4

Objective:

- Recognise simple and complex emotions;
- Recognise emotions through facial expression;
- Strengthen personal identification and expression of feelings.

Time: 60 min

Home activity feedback

Again, for the first 10 minutes of the session, the researcher reviewed the pictures that were taken during the week with their disposable cameras. The focus was to allow the children to consolidate what they learned and share their collection with the group. There was no specific correct response required from participants, but discussion was encouraged.

Emotion Dictionary
By now, the children have a box containing cards linked to different emotions (photos, words and definitions). The researcher asked children to help her to make an emotion dictionary; by cutting the definition of each emotion and pasting it beside a photo describes this emotion “including simple and complex emotions”. This teaches them to know the different vocabulary people use to express or describe emotion, while simultaneously reinforcing the different emotions human express, and what they are called. It was reasonable to do so by session four as the children had learned a considerable number of emotions. If a child matched incorrectly, the researcher would direct him/her to the right one and comment by explaining what clues could help him to know. Each child matched five photos.

**Emotions Thermometer**

The researcher explained that there were different types of the same emotions, such as upset, sad, frustrated, angry, excited, surprised, proud, happy and laughing. She showed flash cards for every type of emotion, and put a blank ‘emotions thermometer’, on a work sheet, in front of each child. The following words were used to fill in the blanks of the emotions thermometer (elated, excited, surprised, proud, happy, content, upset, sad, frustrated, angry, and livid); they had to stick these words in a gradual manner starting with the most positive emotion, and ending with livid. A copy of it was added to the emotions dictionary. The thermometer and the cut-out words were adapted from *Let’s talk emotions* (Cardon, 2004).

Children could use the thermometer when entering the room to describe how they were feeling. The researcher encouraged the children to discuss their feelings. When they were comfortable using it they would take home a copy of the thermometer.

**Break**

**Emotions transporter DVD**

As described at the beginning of this chapter this DVD was established to teach children with autism to understand and recognise emotions through the transporter film. It is produced and directed by
Catalyst Pictures Ltd but the study originally was carried out by Golan et al. (2009). The researcher chose two episodes for the children to watch, then they took turns to answer the quizzes that reinforced and tested their understanding.

**Act and Guess**

This activity is designed by the researcher to teach emotions through acting, where children act different emotions. It also includes a modelling activity, where the researcher models the appropriate emotions to the children.

Children were asked to sit on chairs. A card with an emotion was placed on each chair, face down. When the child sat on the chair, they were to look at the card and to act it out for others to guess.

When the children struggled to display the appropriate emotion, the researcher stepped in and demonstrated the facial expression to guide. They were repeatedly reminded about how to look at the forehead - see if it is relaxed or tense - then move to the eyes - are they open wide or more closed? She then gradually worked down the face, focusing on each feature with the children. Allowing the child to focus on each feature and replicate it with his/her own face would give the child a better understanding of different facial expressions.

**My emotional journal**

The researcher designed a journal for each child. Each page contains two sections, the situation section, where children wrote about any event that they experienced. It could be a simple event such as having breakfast, getting ready for school or playing. The second section was where children had a chance to express how they felt. If they were upset about something, they were encouraged to write it down. If something exciting happened, they were told to describe their feelings. When the child was ready, he/she would share it with the group in the sessions and with their family members. Children were encouraged to share their journal because it was thought to be helpful for their friends and family to understand how the child felt, which in return would help their family to help.
Home activity

- Children took the emotions thermometer with a removable arrow to point at the emotion they feel. Parents were to encourage their children to identify their feelings and discuss them;
- Children took home the emotional journal and started writing in it. It would stay with children until the end of the sessions.

3.5.5 - Session 5

Objective:

- Recognise emotions through facial expression, tone of voice and body language;
- Recognise the change of emotions and tone of voice dependent on the situation.

Time: 60 min

Home activity and feedback

The researcher discussed the use of the emotion thermometer and reviewed their progress with the emotion diary.

Find the emotion from photos taken by children

The researcher prepared three boxes - one for each child - that contained photos which the children had taken with their cameras, and invited them to play. The task was to say an emotion aloud, and for the group to then find the matching photo from the box. Positive reinforcement was carried out for every activity.

Listen to voices

The researcher designed this activity to teach the children to recognise emotions from tone of voice. First she explained the concept to them, giving examples of a sarcastic, angry, embarrassed and shy tone of voice. Then the researcher asked a child to cover his/her eyes and listen to the researcher
reciting sentences that described scenarios. The child was then to state how they feel when hearing these situations. Some sentences and scenarios were as below:

- My mother is sick.
- My birthday was yesterday and I got my favourite gifts.
- I said something wrong and they laughed at me.
- I think there is a thief in our home.

Break

**Emotions Transporter DVD**

The children watched 2 episodes from this DVD (as explained in session 3) then an interactive quiz followed. Using the DVD remote, children took turns to answer the quizzes, that reinforce and test their understanding.

**Guess the feelings through my voice**

The researcher created this activity to teach the children that the tone of voice changes according to emotions. In one group, the researcher chose a famous children’s story that contains different events and change of emotions. The children took turns reading parts of it aloud while reflecting the emotion in their tone of speech. Although the pictures chosen to divide the paragraphs in the text do not represent the exact emotion in the dialog of the story, their understanding of the concept will help them to understand what people mean and feel, using the tone of voice as a tool to reflect the meant or the hidden feeling. For example, people could say a sentence in a sarcastic voice. Each child read two paragraphs. The rest of the children were not allowed to see the reader’s face and had to try to guess the feeling from the voice. Praise was given for the correct choice and prompts when mistaken. It was also important to ask for more suggestions for expressing emotion, e.g., hand gestures and facial expression.

Below is an example:
Gray Eagle and His Five Brothers

There were six falcons living in a nest, five of whom were still too young to fly, when it so happened that both the parent birds were shot in one day. The young brood waited anxiously for their return; but night came, and they were left without parents and without food.

Gray Eagle, the eldest, and the only one whose feathers had become stout enough to enable him to leave the nest, took his place at the head of the family, and assumed the duty of stifling their cries and providing the little household with food, in which he was very successful.

Nevertheless, after a short time had passed, by an unlucky mischance, while out on a foraging excursion, he got one of his wings broken. This was the more to be regretted, as the season had arrived when they were soon to go to a southern country to pass the winter, and the children were only waiting to become a little stronger and more expert on the wing to set out on the journey.

Finding that their elder brother did not return, they resolved to go in search of him. After beating up and down the country for the better part of a whole day, they at last found him, sorely wounded and unable to fly, lodged in the upper branches of a sycamore tree.
"Brothers," said Gray Eagle, as soon as they were gathered around, and questioned him as to the extent of his injuries, "an accident has befallen me, but let not this prevent you from going to a warmer climate.

Home activity:

- Children were given the rest of the story to take home and encouraged to read it in the voice that reflected the emotion;
- Children would be given a template on a work sheet for another home activity. Children were to be on the look-out for clues that would help them to identity different emotions. These include facial expressions, tone of voice, and body language (see appendix 3).

3.5.6 - Session 6

Objective:

- Recognise and express emotions through vocal tone and facial expression;
- To help strengthen personal identification and expression of feelings;
- Link the emotions taught in the sessions to real-world situations.

Time: 60 min

Home activity feedback

The researcher revised and discussed the home activities from the previous session and reinforced their progress.

Career emotions

This activity is a pretend play that helps the children to relate feelings to social events or situations through creating a real-life context and scenario (adapted from “Let’s talk emotions”, Cardon, 2004).
The researcher gave them examples of common jobs. Their imagination was stimulated by pretending to work in the chosen job, then by imagining situations that could trigger emotions. This method teaches the children that certain situations produce certain feelings.

The researcher started the discussion by telling the children that there are different careers in life. These are some examples: childcare worker, teacher, mother, bus driver, computer technician, airplane pilot, firefighter, doctor, greengrocer. The researcher supplied photos for different jobs and includes them in the discussion.

There are different types of emotions that are associated with different careers. The researcher asked the children the following:

- How would a teacher feel if a child works quietly until he finishes the task?
- How would a teacher feel if a child hits another child?
- How would a doctor feel if her patient did not take the medication?
- How would a doctor feel if her sick patient is cured?
- How would a pilot feel while flying a plane safely?
- How would a pilot feel if something goes wrong in the plane?

Children were given a sheet each to write what they would like to be when they grow up. They were asked to design two different scenarios that could happen to them during their work in the chosen job. The researcher brought the emotion box and asked the children to search for the appropriate feelings for each scenario.

**Break**
PC activity

This was Robbie the Robot, as explained in session one. They were reminded to watch for facial features that will help them to recognise the emotion as well as monitoring how the story goes, because social events in people’s lives lead to certain emotions.

Interview

This is a modelling and pretend play activity. The researcher asked the children to choose two careers from the list that was given in the previous activity, and design an interview for a person who works in this field.

The researcher guided the children to compile a list of questions about their feelings and the events that caused them. For example, what things about your job makes you feel happy? What makes you frustrated in your job? The children pretended to carry out the interview. Two children were the interviewers, and one the worker. The interviewers took turns asking questions, and then the worker answered them. The role-play acts were then swapped and everyone took turns playing the other role.

Bingo

The researcher produced a variety of different bingo cards (adapted from “Let’s talk emotions”, Cardon, 2004). Each card contained different emotions in a different order. From a collection of short scenarios, the researcher chose one and read it to the children, then the children had to guess the feeling. If it was correct, then each child placed a chip over the emotion on the bingo card. When a child covered a row of emotions, he/she won.

Example of emotional scenarios:

- It rains during playtime at school.
- You get £10.
- Someone ruined your art project.
- You had a bad dream.
• You get to go see a movie.

Home activity

The children were asked to identify the situations and social events that make them feel excited, sad, frustrated, or scared (see appendix 4).

3.5.7 - Session 7

Objectives:

• Identify feelings of others according to the situation;
• Identify feelings of others according to their desire;
• Learn the relationship between events as causes, and corresponding emotions as effects;
• Learn problem-solving to deal with our own emotions and others’.

Time: 60 min

Homework feedback

The researcher reviewed the last session and went through what the children wrote on their sheets. She reinforced the children’s participation and encouraged them to share their feelings.

Guess the feeling according to the situation

The researcher wrote four different situations on the board, and asked the children to say what they felt according to:

• When someone gives you something nice or you do something exciting, then you feel happy;
• When something scary happens, you feel frightened and want to run away;
• When something bad happens to you, or someone you love leaves, you feel sad;
• When someone is mean to you or does something horrible to you on purpose then you feel angry.
The researcher then chose a set of pictures from *Teaching Children with Autism to Mind-read* (Howlin, Baron-Cohen and Hadwin, 1999); the pictures contained various situations that reflected the emotions, happy, sad, angry, and afraid, but the person’s face did not show any emotion. The children needed to interpret the social and emotional context of each picture and predict what the emotion of the character would be. In turn, one line is used to explain the situation as read to the child. For example, Alex falls and smashes his plane on the floor. Then, he/she is asked, “How will the people in the photo feel? The children were to choose from happy/sad/angry/afraid. The most usual situations were chosen from the book, such as a birthday, winning a game, house on fire, a lost or popped balloon, a person outside in the rain without an umbrella, a person in a dark room, a person saying goodbye to mum or dad in an airport, and friends visiting.

**Guess the feeling from the desire**

The researcher explained that people would feel happy if something they like happened, or they got something they wanted, and this was called ‘desire’. We need to know what it is that someone desires, in order to know what they feel. For example, George wants some crisps; his mother has bought him a packet of sweets. How will George feel? The children had to choose between the happy and the sad emotion cards. The researcher then said, “However, if his mother buys him a pack of crisps how will George feel?”

The researcher presented a set of pictures that have different situations indicating either happiness or sadness from *Teaching Children with Autism to Mind-read* (Howlin, Baron- Cohen and Hadwin, 1999). In turns, the researcher showed each child the first scene that illustrates what the character wants; after that, she said, “This is (character’s name). What does he/she want?”

Then she showed the next scene that illustrates what actually happens, and asked, “How will he/she feel?” The children had to choose between happy and sad. Then she asked, “Why will he/she feel happy/sad?”

**Break if needed**
Role-play script

The researcher designed this activity to teach the children how different events and social situations could cause feelings. First the researcher discussed with children the different types of genre on TV, and then wrote them down on cards (drama, comedy, action, adventure, romance, action, horror). The cards were placed in front of them, with all the colour pictures from a feeling pack (Speechmark Publishing Ltd, 2009). These cards illustrated a wide range of feelings in both children and adults. Some cards feature just one person, and some show interactions between two or more people. Some cards reflect positive emotions, while in others, they are negative, and sometimes both positive and negative emotions are featured on the same card. All photos were from real-life situations.

The researcher asked the children to match these cards to the genres. For example, if the card showed a person who was sad, ill, or had lost a game, it would go under drama. If it showed people fighting or arguing, it would be under action. Some cards showed conflicting emotions; for example, one card showed a nanny or mother smiling and cheering a crying baby. Another example showed three players standing after a game - the winner was receiving a medal with a proud feeling, the second looked embarrassed and the third was angry. A sample of the cards is presented in (Appendix 8).

Next, as part of this activity, the researcher asked the children to choose two cards; one showing a single emotion and one showing conflicting emotions. Then she asked the children to imagine what might happen to that person to make him/her feel that way. The children were asked to elaborate on both cards and come up with a before-scene scenario, the scene, and after the scene.

Problem solving

The idea of this was to teach the children to follow the four steps of coping with unpleasant feeling, adapted from *Dealing with Feelings* (Dulgokinski, 1988). Through direct teaching, the researcher explained and wrote on the board the following steps:
• Accepting: the children need to learn that it is normal to have negative feeling, and you should identify it by saying to yourself ‘I am sad’, ‘I am angry’, or ‘I am frightened’. It is natural to have feelings
• Relax: teach the children to take time out before acting. Suggest taking deep breaths.
• Think: think about ways to help yourself instead of doing bad things to yourself, or others, like shouting or destroying objects.
• Do: act on the methods you thought of, to help yourself feel better.

At the beginning of this activity, the researcher explained that there are positive feelings that we enjoy and negative feelings that might cause problems to us. Examples were given as below:

• When someone gives you something nice/says kind words to you/plays with you, then you feel happy.
• When something bad happens to you/you lose something/people leave then you feel sad.
• When someone does something bad to you on purpose then you feel angry.
• When you see something scary or you get lost then you feel scared and you may hide or run away. (Examples were adapted from teaching principles of Teaching Children with Autism to Mind-read, Howlin, Baron-Cohen and Hadwin, 1999).

The children learned to accept feelings by asking them to say when they have felt happy, sad, angry, or afraid. Each child took a turn to share his/her feelings.

The second step of dealing with negative feelings was thinking. The researcher chose the sad feeling and drew it on the board, and she encouraged the children to work in one group to help make it a happy face instead, by suggesting different ideas. All these suggestions were written on the board. Prompting was carried out as follows: “When I feel sad, I like to go to my garden and jump on the trampoline. What do you do to cheer yourself up?”

The researcher then set the scene for the next part by saying to the children, “Imagine your best friend feeling sad or upset. What could you do to help him/her be happy again?” The idea is to teach children to practice supporting others and empathising with them. The researcher gave each child paper and individually they were asked to write suggestions to cheer their friend up.
Home activity:

- The children were given the four steps of coping with unpleasant feeling;
- The children took a task to work on their problem-solving strategies. They were asked to think of ideas to deal with emotions. The home sheet was as follows:

When I feel angry, I can:

- 
- 
- (This is repeated for scared, happy and confused)

3.5.8 - Session 8

Objectives:

- Strengthen personal identification and expression of feelings;
- Learn strategies to deal with negative feelings;
- Link understanding of emotions to social relationships;
- Improve empathy with others.

Time: 60 min

Home activity feedback

The researcher reviewed with the children their ways of dealing with the four emotions she gave them. Then she reinforced the positive ideas children presented and commented on any inappropriate suggestions of dealing with their own emotions.

Likes and dislikes
The researcher designed this activity to teach children that there are things, situations and people that give us good feelings and others that give us negative feelings. Making the children recognise this about themselves could help them to understand why they feel certain emotions, and also realise the emotions of others. It is similar to the idea of desire. If desires are fulfilled, people feel happy, and vice versa. In the second part, the researcher asked the children what they could take from the dislike to the like list, in order to make them practice flexibility in their emotions, and to learn how to compromise their negative feelings, which could teach empathy.

The researcher started the activity by explaining to the children that there are many people, things and events in our life - some we like and enjoy, and some we do not like so much.

Each child was given a sheet that was divided into two sections. The children were asked to make a list of the things they hate, and another list of things they like. Then children then discussed their lists with a partner and compared them. They ticked what they found in common. The researcher challenged each child to persuade his partner to drop some of his dislikes. While they discussed with each other, they practiced controlling their negative feelings.

**Building relationships**

The researcher asked the children to imagine that they had just started a new school. What are the ways you can use to start a conversation with someone in your class? The researcher modelled a small scene, where she entered the room, stood for a few seconds, watched what the other children are doing then approached someone and started a conversation, by asking him about something he was doing. The researcher explained to the children that by paying attention to what other people seem to feel and like, we could start a conversation, then maybe we become friends. Children were given cards with different colours. Individually, each wrote as many ways of interacting as they could, then stuck them on one big sheet for the entire group. Then children then took turns reading each other’s ways of starting a conversation, a game or any sort of social interaction. Children were prompted as needed. The second part of this activity involved acting of the situations.
Caring attitude

The researcher created this activity to teach empathy. It emphasises the idea that connecting with others’ feelings make others feel positive, which in return could help to build good relationships.

The researcher chose some pictures from the coloured “Feeling” cards (Speechmark Publishing Ltd, 2009). They show people helping others in some way. For example, a mother was caring for a sick child, a child comforting an angry friend, etc. She presented each card and asked the following question for each child:

- What is each person feeling, and why?
- How is the caring person helping to make things comfortable for others?
- What does the caring behaviour make the other person feel?

In the second part of this activity, the researcher asked the children what they would do if someone made a nasty or hurtful remark about your friend. She then presented the children with different colours of note paper, and asked them to write their ideas and then stick them to a piece of paper, labelled “how to support your friend”.

Best behaviour award

At the beginning, the researcher reviewed with them the four steps used when dealing with unpleasant feeling, and put on the board ‘accept, relax, think and do’. Then, the researcher chose some cards showing two or more people from the “Feeling” collection (Speechmark Publishing Ltd, 2009). She asked the children to say how the people seem to be feeling, and whether anyone on the cards is behaving in a way that is affecting how someone else feels. She said, “Imagine that your friend is upsetting you, what do you do? Think of good and smart ways to deal with negative behavior towards you.” The researcher gave each child 5 different colours of card, to write ideas on then stick them to one large board. They were reminded to use the smart steps to deal with unpleasant feeling. The
researcher praised the appropriate responses and commented on the less appropriate ones. Then she
gave each child a best behaviour certificate, as a reward to take home in order to remember the
positive ways of dealing with negative feelings.

Home activity

- On the other side of the best behaviour certificate, the researcher put a rules template. She
asked the children to come up with three rules when responding to negative behaviour from
someone. She gave examples like, “How do you reply when you are angry? If someone said
negative comment about you what do you do?”
- Children were reminded to work on their journal and bring it with them next time for sharing.

3.5.9 - Session 9

Objective:

- Identify emotions through situations;
- Learn strategies to deal with negative behaviour;
- Link the emotions taught in the sessions with social relationships.

Time: 60 min

Homework feedback

The researcher reviewed all the rules that the children came up with and reinforced them.

Relationship map

This activity is adapted from many programmes used in supporting children with social and emotional
difficulties, e.g., in Group Interventions for Children with ASD (Cotugno, 200). Each child received a
relationship chart that had the following areas: child’s name, family, friends, people at school, and
others. They were asked to complete the map by writing up names around the main areas. It was
explained that some people would belong to more than one area, so join their name to both with a
long arrow. Explain that the child’s name belongs to all of them, so it must be in the middle. The
children were encouraged to talk about how they feel about some groups and what they do to communicate with them.

**Emotional cards**

The researcher prepared emotional cards that depict positive and negative situations, and two questions: “how do you feel?” and “what do you do?” In the middle, she placed the emotional landing game board (adapted from *Let’s Talk Emotions* handbook (Cardon, 2004)). The first player rolled the dice and move to the designated number. If he landed on a square that says ‘EMOTION’, then he drew a card. He read the situation and answered the two questions. If the child provided an appropriate way to handle the situation, he moved forward one space. If he gave an inappropriate answer, he moved back one space. The researcher discussed with the children the consequence of negative responses on other people’s feelings, and encouraged them to give more appropriate Solutions. If the child corrected his or her choice, then he or she got to move forward.

Examples of situations are:

- Your dog is sick and does not want to play with you;
- Your mother just told you, you are going to the doctors to get a shot;
- There is a big party at school today. Everything will be different in the class;
- Your mother told you she would take you to play in the park, and then it started raining;
- You invited your friend over to play a computer game but your friend wants to play football.

**Real-life situation from the emotional journal**

The researcher asked the children to read a situation from his/her own journal in turn. One child read the situation and another child guessed the feeling then had to say an appropriate response. The researcher encouraged the children that the appropriate response must have consideration to the first child’s feelings. She called it the ‘empathetic’ response. At the end of this activity, the children discussed how the appropriate response makes them feel.
It was important to choose activities in this session that recapped what they had learned in the last nine. Also, the researcher did not choose cognitively challenging activities, as it was the last session and she wanted the children to end the intervention with a relaxed and fun period of time.

**Objective:**

Applying what children have learned through programme sessions.

**Time:** 60 min

**Guess the emotion**

The researcher shuffled the cards that they had collected in the emotional box and put them face down. The first player picked a card, kept it to himself or herself, and then mimicked the facial expression on the card. The other player(s) had to guess the correct emotion.

**Mr. Face**

The children seemed to like the interactive games where they get to create different face expressions, for example, Mr. Face, the wall hanging game, which was used in session number 2. The researcher brought the emotions dictionary that they had put together from previous session and asked the first player to draw a card, read the emotion and its definition, while the second player created the correct face on Mr. Face.

**Down the memory lane**

The researcher brought the photos from when children depicted different emotions in the mirror game, and the photos from the disposable camera they were given. She gave each child a collection of 4 pictures then showed it to the group and asked, “What is this emotion? What was the occasion for this photo?” Then she allowed the children to browse through, remembering what the feeling, occasion for each feeling was and enjoying their work.
Matching scenarios to emotions

The researcher gave each child a box that contained different emotions, and then she read out the following scenarios:

- You forgot your jacket, and it is cold outside;
- You friend does not want to play with you;
- You get to go to the beach;
- Your best friend is mad at you;
- It is bedtime and you are not finished with your homework;
- It is your birthday and you got your favourite toy;
- You lost a game;
- You are locked out of the house;
- The food you do not like is given to you at dinner today;
- You rescue a cat from a tree;

After each scenario, the researcher asked the children to search for the correct emotional response from their box.

Sharing the journal

The researcher asked the children to exchange their journals and allow other group members to learn from their experiences. If a child was reluctant she suggested that he/she chose a few situations that he/she had been through, and talked about feelings at that time. The researcher discussed with the children whether they would behave differently in similar situations, now that they had learnt about emotions.

Thank you
The researcher thanked children for the time she had spent with them and told them that this was the last session.

She gave each child a sheet to write three things they liked about the programme and three things they had learnt.

The researcher counted each child’s rewards and certificates, and gave each a present to praise them for their cooperation and willingness to learn.

She encouraged the children to:

- Keep using the emotional journal;
- Apply what they learned in the programme in their life;
- Explain the benefit of having a better understanding of our own feelings, and the feelings of others;
- Remind them that social relationships with family and friends require caring and loving from us to them and from them towards us.

3.6 - Piloting the intervention programme

The researcher identified four children as possible candidates for the piloting. The piloting was across all genders, different diagnoses, and a wide age range. Their parents were contacted to obtain permission. All four parents consented for their children to be included.
The researcher chose 10 activities from the planned sessions and conducted them on two occasions with the above four children. Each session was to last 60 minutes, which was the same time planned for a session of the intervention programme.

### 3.6.1 - Purpose of piloting the intervention programme:

- To have a better understanding of the children’s ability to understand the instructions in each activity;
- To monitor the time required for each activity that the researcher had planned for the intervention programme;
- To monitor the researcher’s ability to conduct the planned activities and to check for any drifting;
- To identify if the materials and planned activities were of an interesting nature, and to look for any changes that would be needed for the final intervention;
- To ensure that the planned activities and their structure would not cause any identifiable stress to children during the sessions. If identified, those activities were to be modified or removed from the final intervention programme;
- To gain a better understanding of the children’s interaction with the activities and with each other;
- To assess the language needs used when conducting the intervention programme.
After piloting the programme, the researcher identified the following areas that needed more attention, and accordingly, relevant changes were made.

**Table 16: Areas which needed to be changed after piloting**

<table>
<thead>
<tr>
<th>Area that needed attention</th>
<th>The change made</th>
</tr>
</thead>
<tbody>
<tr>
<td>The ‘matching picture for simple emotions’ activity was found to be less challenging</td>
<td>Was not repeated more than once.</td>
</tr>
<tr>
<td>Children seem to need more time to adapt to each other and the researcher</td>
<td>The session time for the first session was shortened</td>
</tr>
<tr>
<td>Children were able to identify simple emotions much more quickly compared to the more complex emotions</td>
<td>The activities were abbreviated accordingly</td>
</tr>
<tr>
<td>Children seem to have mood variations during sessions</td>
<td>The choices of activities of the sessions were made to be flexible, and to be based on the progress of the child. Extra activities were planned in view of possible mood changes</td>
</tr>
</tbody>
</table>
Chapter 4 - Methodology

4.1 - Introduction

The main aim of this research is to evaluate the effectiveness of an experimental cognitive behavioural training programme designed to facilitate and promote social and emotional understanding of children with high-functioning autism. The researcher decided to choose two methodologies to test the hypothesis of the research: the quasi-experimental methodology, where one group with three children will receive the experimental treatment (see chapter 3), and one group with three children will receive the control treatment. This is a pre-test-post-test 2x2 quasi-experimental design that uses multi-item assessment, and for which reliability and validity has been established through prior research. The second method is a short-term exploratory case study methodology that takes an in-depth and open-ended approach to look at two of the six children who had participated in the experimental intervention in study 1. The study is thus a mixed-methodology study in which both quantitative data and qualitative data are used.

4.2 - Research design

4.2.1 - The quasi-experimental research methodology

To study the impact of the intervention programme on a group of children with high-functioning autism, it is best to approach the study using a quasi-experimental design. Quasi-experimental design is used when random assignment is not practical for the research aims (Coolican, 2005). This design benefits from the use of a control group where the researcher controls assigning the sample to two conditions; the experimental and the control ones depending on criteria stated by the researcher (Robson, 2002). To measure the change in the dependent variable and compare the data from the experimental group with the control group, quantitative measures are used. (Quantitative measures allow researchers to provide estimates for the population at large in education, where it is able to look at all the factors that affect a certain aspect of education, and even estimate how far it goes into the population (Coolican, 2005). Using experimental methodology in social research explain the “real
case” using data that are already present (Robson, 2002). According to Cohen et al (2006), experimental evaluations are defined as ‘a form that seeks to determine the degree to which a specific programme or policy empirically fulfils or does not fulfil a particular standard’. There are a number of advantages to this type of design, including: (a) the careful documentation of measurement procedures facilitates the replication of the study, and the capacity to replicate is a hallmark of scientific research; (b) the results from one quantitative study can be more easily compared to comparable studies in the literature; (c) quantitative research lends itself to the testing of hypotheses; (d) the use of numerical assessments makes it easier to describe the results with precision and standard measures of central tendency (mean, median, and mode) can be computed; (e) personal bias can be avoided by researchers keeping a ‘distance’ from participating subjects and always employing subjects unknown to them (Cohen et al, 2006; Coolican, 2005; Robson, 2002).

The perspectives of parents, teachers, and the child can be compared in the current study, a classic example of “triangulation” - a term introduced in the classic and frequently cited paper by Campbell and Fiske (1959), cited in Cohen et al (2006) and Tashakkori and Teddie (2003). The same mountain can appear quite differently when viewed from the east, north, south, and west. Similarly, children may look very different to themselves, their parents, and their teachers. It is sound methodological practice to look for a consensus by combining the information collected from different perspectives. An argument could be made that the consensus is closer to an accurate appraisal than that provided by any one of these three sources alone. Similarly, a parent may see something about a child that is invisible to the teacher. Thus, a major aim of the present study is to examine the similarities and differences in the data provided by parents, teachers, and children (Tashakkori and Teddie, 2003).

From the above, we can establish that quantitative methods view phenomena in the social world as a reality through collected numerical data, or by transforming observed information into numbers and using them as a guide to the rest of population. This method gives the opportunity for most phenomena to be examined. However not all of these are best analyzed using quantitative measures.
Some problems need in-depth analysis through, for example, case studies and interviews. In this case, qualitative methods are the best way to study these types of data.

Experimental research in the real world faces a number of negative aspects that affect the research adversely, for example, the control in an experiment involves an artificial environment. This level of experimental control cannot sometimes be practised in reality, and may give different results when applied (Robson, 2002). The forms of collecting data are preset by methods such as questionnaires, tests and inventories. These types of methods do not always reflect the real feelings of participants toward what is examined, for they might just offer the closest answer available in the tool (Robson, 2002). Therefore, the results are limited, as numerical data do not provide detailed responses of the subject studied. In addition, the major limitation in the quasi-experimental research is the absent of randomization. This could affect the internal validity and make any measured change prone to other intervention factors. In this research, establishing a casual relationship between the variables is an issue.

The purpose of using quantitative measures in the current quasi-experimental study is to analyse the numerical change in the variables. The assessment tools give statements that are transformed numerically. The change in these numbers between pre-intervention and post-intervention is taken to reflect change associated with the intervention. The hypothesis that an intervention programme would improve social skills and emotional understanding is best tested using such a method. Another reason is the number of dependant variables tested. As presented in this chapter’s table 7, four variables are tested through questionnaires, inventory and a checklist using three resources (parents, teachers and children).

4.2.2 - Case study research methodology

A case study is an explanatory analysis of a person, group or event that is studied by one or more methods. It is possible to study single and multiple cases relying on qualitative and or quantitative
evidence but the qualitative data are most invariably collected (Robson, 2002). In social sciences, a case study seeks to uncover rich, detailed, and in-depth analysis of behaviour. Questions about the ‘how’ and the ‘why’ of behaviour are the major focus in the search to understand the causes that underlie the behaviour. This research design seeks to test hypotheses formulated in advance of the research or focuses on generating new hypotheses (Cohen et al, 2006, and Silverman, 2010)

Case study research looks into a small number of aspects at an in-depth level, rather than looking at diverse topics more broadly. This eliminates the possibility of confounding any variables found (within any given research) overlapping one another, and defeating the entire need and the role of the research (Family Health International, n.d.). Although the aim of such research is often the quest for broad generalizations, it is particularly useful when focusing of the unique aspects of a person or situation. Another benefit of this research method is that, while it focuses attention on details of the case, new topics or results could emerge that are not initially considered (Silverman, 2010).

In the current research, two types of data were obtained to study the cases. Qualitative data were mainly used through semi-structured interviews before and after intervention. Then the quantitative measures for the chosen cases were drawn together with the qualitative measures to give clearer and accurate finding.

From the qualitative measures, descriptive details about certain actions and reasons for certain actions could be built up from individual cases. Data could be collected using various forms - such as interviews and group discussions, observation and field notes, texts, media clips, pictures and other materials. However, there are disadvantages with this method in educational research, too. It does not address the general populations and factors in education. It also goes deep into details and so is unfavourable for quick educational research (Tewksbury, 2009). Robson (2002) explained that, when this method is conducted it is assumed that human behaviour is different and unpredictable. For that reason, researchers may face challenges analysing data using systematic comparison if participants give diverse responses, and it could be more challenging still when their responses are subjective. It
also depends on the researcher’s skills when applying interviews, and his/her ability to elicit detailed information from observations.

The purpose of choosing qualitative methods in the current research was based on the need for detailed information that looks beyond simple analysis of numbers, by recording children’s behaviour, parents, and teacher’s attitudes and their feelings. Moreover, it gives consistency among parents, teacher and children on the characteristics of HFA, and shows the areas of variation and agreement.

The qualitative form used to collect data in the current case study is interviewing HFA children, their parents and their teachers using open-ended semi-structured interview questions. Accordingly, this method encourages participants, parents and teachers to expand on their responses, and may lead to new findings. It is expected that parents and teachers will be generous in giving details about the problems their children face and their lack of support. This information might lead to new findings or hypotheses. Similarly, interviews with children may give a clear indication of the exact areas of deficit in emotional understanding and social skills, that quantitative measures fail to assess. I am aiming, by using this method, to provide an integrative perspective of the child, teacher, and parent.

After deciding what cases to study and what forms of data will be collected, it is still essential to decide on another component that will shape the design of this study. From Miles and Huberman (1994) and Yin (2003), the major components for case study design are summarised as the following: (1) how data will be analysed; (2) what conceptual framework to use; (3) the method of bounding the data; and (4) how to interpret the findings. According to Yin the case study framework should develop to include all the themes emerging from data analysis (Yin, 2003). The type of data analysis depends on the type of case study. The technique I used involved data reduction, coding, writing up the data according to themes, analysis through integration data, comparing the cases, and applying the theory (Miles and Huberman, 1994). The other type of data collected was the quantitative measures used in the experimental design of the cases chosen. They were analysed with the interviews data to look for agreement between them. The case study also compared the data collected before the intervention with the data collected after the intervention.
4.2.3 - Mixed Methodology design

A widespread consensus has emerged among many educational researchers, that a mixed-methodology design can be very useful because it combines the positive aspects of quantitative and qualitative data and so can compensate for the negative aspects of each methodology. (Cohen et al, 2006; Tashakkori and Teddie, 2003; Mertens, 1998).

In social science, the qualitative data provides a detailed understanding of a research problem, while quantitative data provides a more general understanding of a research problem. This qualitative understanding comes from studying one or a few individuals and investigating their perspectives in details, whereas the quantitative understanding comes from examining a large number of people and assessing specific and narrow variables. Although qualitative research and quantitative research provide different pictures, the two methods complement each other and lead to the extensive information that is credible and factual, focusing on both details and statistics (Driscoll et al., 2007). Studying the human behaviour from more than one point gives greater validity to the research as well as providing a more complete picture of human behaviour and experience (Mertens, 1998). This way the quasi-experimental design complements the case study one by offering explanations for statistical findings in the research, making it more definitive comparing to the usage of only one method (Lisle, 2011).

Another important aspect about this type of design is that it gives the researcher greater confidence if the findings from the quantitative and the qualitative data correspond to each other. For example, if the results from the interviews agree with the measures used in the experimental design, the outcomes of such research are assured (Robson, 2002).

However, there are weaknesses of this mixed model: it brings the challenges of both methods, especially those that are not eradicated by the combination of the two. As such, the method faces challenges: data may not necessarily be linked to different paradigms and ideologies, where even the
approaches offer different orientations to the research (Bazeley, 2004). With this in mind, this approach cannot be applied in all kinds of educational research, but certain factors need to be determined for the suitability of this method; thus, it is only applicable in selected cases. In my opinion, data analysis is the most challenging aspect of using mixed models. Making assumptions that are drawn from both methodologies is the most challenging step. Analysing both numerical data and verbal responses could go both ways; it could either complement or contradict. Yet, I still chose the mixed-model design to evaluate the intervention programme. The quasi-experimental design was conducted in a small-scale study. Therefore, by doing a case study, I get in-depth analysis, and can see whether the independent account I get from parents and teachers agrees with the measures used in the experimental design.

This sums up that the classic “triangulation” approach was applied in the current research through two ways ;(1) using mixed research design; (2) collecting data from different perspectives (parents, teachers and children).

Indeed the experimental methodology would answer the research questions, but the intervention was planned and devised for the research purpose. With this in mind, detailed information is needed to give a clear picture of the validity of a new programme. Collecting qualitative data would give descriptive details of the children’s social skills and competences, and the areas of strengths and weakness. This would support other research when planning an intervention, as well as giving clear data of what new emotional understanding skills were learned, and as a result, what aspects of social interaction emerged. The quantitative data were necessary to give an accurate measure of these skills and a clear comparison of the pre- and post-intervention programme. Integrating the data in one analysis (see chapter 7) and drawing one conclusion justifies the use of mixed methods.

Altogether, there is no single best method of research as each serves its own specific purposes, and each has its own challenges and strengths. This makes it necessary to go through the critique of methodologies in education proving that they all have their roles, strengths, and challenges that set them apart from one another.
4.3 - Study one

4.3.1 - Research Design:

The table below illustrates the independent variables:

Table 17: Independent variables

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Intervention</td>
<td>assessment</td>
<td>assessment</td>
</tr>
<tr>
<td>Control Intervention</td>
<td>assessment</td>
<td>assessment</td>
</tr>
</tbody>
</table>

The researcher has developed an experimental cognitive behavioural training programme especially for this study. The goals of the programme are (1) To enhance their ability to understand emotions (2) To enhance their social interaction skills, (3) To improve their ability to generalize the new skills they have learnt, and (4) To identify the relationship between the intervention programme as a cause and children’s outcomes as the effects.

4.3.2 - Dependent Variables

There are a total of 13 dependent variables (see Table 2) drawn from Spence (1995), Bar-On and Parker, 2000) and a parent checklist developed by the researcher (Table 4). All six children were assessed before and after conducting the experimental intervention programme.
### Table 18: Dependent variables: published scales

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Social skills</td>
<td>Parents</td>
</tr>
<tr>
<td>2</td>
<td>Teachers</td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Participants</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Social competence</td>
<td>Parents</td>
</tr>
<tr>
<td>5</td>
<td>Teachers</td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Emotional Quotient</td>
<td>Participants</td>
</tr>
<tr>
<td>7</td>
<td>Intrapersonal</td>
</tr>
<tr>
<td>8</td>
<td>Interpersonal</td>
</tr>
<tr>
<td>9</td>
<td>Stress management</td>
</tr>
<tr>
<td>10</td>
<td>Adaptability</td>
</tr>
<tr>
<td>11</td>
<td>Total</td>
</tr>
<tr>
<td>12</td>
<td>Positive impression</td>
</tr>
</tbody>
</table>

The table below illustrates the study design at two test periods for the control group and the experimental group.
<table>
<thead>
<tr>
<th></th>
<th>Baseline assessment</th>
<th>Intervention</th>
<th>Post- assessment</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experimental group</strong></td>
<td>Emotional inventory test</td>
<td><strong>Provide programme</strong></td>
<td>Emotional inventory test</td>
<td><strong>No programme</strong></td>
</tr>
<tr>
<td></td>
<td>The Spence social skills Questionnaires</td>
<td></td>
<td>The Spence social skills Questionnaires</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Spence social competence with peers Questionnaires</td>
<td></td>
<td>The Spence social competence with peers Questionnaires</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parents Checklist</td>
<td></td>
<td>Parents Checklist</td>
<td></td>
</tr>
<tr>
<td><strong>Control group</strong></td>
<td>Emotional inventory test</td>
<td><strong>No programme</strong></td>
<td>Emotional inventory test</td>
<td><strong>Programme</strong></td>
</tr>
<tr>
<td></td>
<td>The Spence social skills Questionnaires</td>
<td></td>
<td>The Spence social skills Questionnaires</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Spence social competence with peers Questionnaires</td>
<td></td>
<td>The Spence social competence with peers Questionnaires</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parents Checklist</td>
<td></td>
<td>Parents Checklist</td>
<td></td>
</tr>
</tbody>
</table>
4.3.3 - Sampling

The nature of the study required all the sample group children to be trained simultaneously in a group environment. Therefore, it was important that the researcher could identify children who live in the same borough. Firstly, the researcher contacted 60 primary and junior mainstream schools in the outer London boroughs by means of letters. These letters consisted of a description of the proposed research, the experimental programme in detail, consent form for the parents, and a copy of the ethical approval. (Appendix 7). Another 30 mainstream schools in the Inner London borough were contacted in the same manner. In addition, 32 special schools that cater for children with autism and Asperser’s syndrome were also contacted by post. (Appendix 8 for sample of the list of schools)

The researcher also contacted organisations such as the national Autism society (NAS), autism research centre, autism care UK, UK autism foundation, disability trust, contact a family, the eagle house group, the cambian group, and continyou organisation. In addition, the researcher became a member and participated in meetings of the National Autism Society and local Group parents’ forum in order to encourage more recruitment into the research. The researcher proposed to conduct the study on 16 children who have high-function autism. Although the researcher explained all the necessary information about the nature of the intervention, its safety, anonymity, time, and duration of programme as well as avoiding school hours, very few parents responded to allow their children to participate. From investigations and observations done by the researcher, she concluded the following reasons for the lack of responses: (1) some schools are already undertaking other projects. (2) The Heads of schools do not distribute the letters to reach parents. (3) Children who are in special schools have a mix of abilities; therefore, heads of schools feel that their children will not be able to participate in the intervention. (4) Due to the emotional effect of autism, parents have doubts in any new intervention programme. (5) Lack of responses led the researcher to spend a longer time contacting other schools. This caused the loss of other subjects who agreed previously.

In conclusions, twelve parents responded. They were then invited for an informal meeting that took place on the 27 of November 2010 at a small conference room. A total of eight parents and their
children attended this meeting. The attendees were briefed about the research process, and all their questions were entertained.

**Inclusion and Exclusion Criteria**

The inclusion criteria were: (1) Age between 7-11 years, (2) Enrolled in mainstream schools at the time of recruitment. (3) Diagnosis of high-functioning autism, Asperger’s syndrome, Atypical autism, and Pervasive Developmental Disorder- Not Otherwise Specified (PDD-NOS). The exclusion criteria were: (1) Diagnosis of significant language delay and/or additional learning difficulties. (2) Children in special schools.

**Internal Validity**

When recruiting the sample it was assured that the children did not receive similar intervention programme, a programme that teaches them social-emotional recognition and understanding. One child received social skills for a period of time but not at the same time with this intervention. His social skills programme was different content and based more on providing the chance to the child to socialize with other children. He spends lunchtime with a few students who volunteer to have lunch and the teacher would choose a topic according to his interest. Teachers and parents were not aware of the exact goals of the intervention programme but rather they were told the general purpose is to receive an intervention programme for enhancing the social functioning of children with autism.

**Final sample**

The final sample consisted of six children, three of whom were from one borough and three from another borough. The type of activities in the intervention programme required to be delivered to children in groups. It was important to make the access for parents within easy reach therefore; the design was a non-equivalent group. The children were divided into two groups depending on their postcode. Assigning the experimental group and the control group was then randomly selected. Using
fictional names the experimental group included Freddie, Oliver, and Jack. The control group included Adam, Daniel, and Chan. A local school volunteered to provide a class for children who live in one borough for the researcher to carry out the intervention. A small room owned by a Church was also rented by the researcher for children in the other borough.

Summary information for each child is reported below in Table 9.
### Table 20: Summary table of biographical information of each child

<table>
<thead>
<tr>
<th>Child’s name</th>
<th>Freddie</th>
<th>Oliver</th>
<th>Jack</th>
<th>Adam</th>
<th>Daniel</th>
<th>Chan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>11</td>
<td>10</td>
<td>8</td>
<td>11</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>Male</td>
<td>Male</td>
<td>Male</td>
<td>Male</td>
<td>Male</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Asian/any other Asian background</td>
<td>White British</td>
<td>White British</td>
<td>All ethnic group/Arabic</td>
<td>Black British</td>
<td>White Asia/Japan</td>
</tr>
<tr>
<td>School year</td>
<td>Year 6</td>
<td>Year 5</td>
<td>Year 4</td>
<td>Year 6</td>
<td>Year 4</td>
<td>Year 5</td>
</tr>
<tr>
<td>SEN stage</td>
<td>School action plus</td>
<td>School action plus</td>
<td>School action</td>
<td>School action</td>
<td>School action plus/ Undergoing statutory assessment</td>
<td>Statement of SEN</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>Atypical autism FDD-NOS</td>
<td>Asperger’s syndrome/ food allergies/ asthma</td>
<td>Asperger’s syndrome</td>
<td>Asperger’s syndrome</td>
<td>Asperger’s syndrome</td>
<td>Autism-High function</td>
</tr>
<tr>
<td>Type of Intervention</td>
<td>IEP, twice a week with SENCO, touch typing, OT tools and exercise</td>
<td>IEP, 3 mornings teacher assistant, social skills training at school, OT exercise and touch typing</td>
<td>IEP, 1 hour per week, support from SENCO, math support, and speech therapy</td>
<td>IEP and once a week support from SENCO, social skills training for one term</td>
<td>IEP, Part time Teacher assistant, once a week Outreach, and 5 individual OTs</td>
<td>IEP, part time support from teacher assistant, and Social skills support at school</td>
</tr>
</tbody>
</table>

#### 4.3.4 - Assessment and procedures

All six children were assessed before and after conducting the experimental intervention programme. Four tools were used for this purpose which are:

- The Spence Social Skills Questionnaire (Spence, 1995) – to elicit a score of the social skills.
• The Social Competence with Peers Questionnaire (Spence, 1995) – to elicit a score of outcomes of interaction.
• Emotional Quotient Inventory: Youth Version, (Reuven Bar-On and James D.A. Parker)
• A check-list devised by the researcher.

The Spence Social Skills Questionnaire and the Social Competence with Peers Questionnaire (Spence, 1995)

These questionnaires were designed to assess social competence, and social skills of typically developing young people aged 8–18 years. Social competence was measured through the reflections of the consequences and outcomes of social interactions. Social skills were measured through the reflections of certain behavioural responses during interactions with another person that have been suggested by researcher, parents or teachers to lead to positive outcomes from social interactions. In the original study (Spence, 1995) the questionnaires were conducted in a class basis using a sample of 313 teachers, 187 parents and 386 pupils. The sample represents children and adolescents in Sydney Metropolitan area. Due to the small norm, the psychometric properties of the Spence social skills questionnaire and the Social competence with Peers questionnaire could not be examined in this study, but evidence for reliability and validity are available in the literature (Spence, 1995). The final version of the Social skills questionnaire includes 30 items. The Social competence with peer’s questionnaire includes slightly different items for parents, teachers and pupils. The final parent and teacher questionnaires include 9 items in each scale whereas the pupil version includes 10 items. The questionnaires used a 3 point rating scale ranging from not true (0), sometimes true (1), to mostly true (2). The total score is calculated from the sum of all numerical rating scale. (Appendix 9-14)

• The Social skills questionnaire measures conflict resolution/avoidance, warmth and empathy, and social achievement. It was designed to measure social skills and it includes eye contact, facial expression, and voice tone and volume. The Social competence with peers questionnaire focuses on the consequences of social interaction, relating to outcomes in relationships with peers in children aged 8-18.
• Social skills questionnaire-parents mean was 46.11 (SD=9.03, n=187), with a maximum total score of 60.
• Social skills questionnaire-teachers mean was 52.89 (SD= 9.25)
• Social skills questionnaire-pupil mean was for girls 47.15 (SD=6.59) compared to 43.60 (7.58) for boys.
• Social competence with peers-parents mean was 14.82 (SD=3.12) maximum total score is 18.
• The Social competence with peers- teachers mean was found to be 15.60 (SD =3.11)
• Social competence with peers- pupil mean was 15.53 (SD=3.17).

The correlation between parent, teacher and pupil ratings of the social skills competence were generally good with an r=.55 for parents, r=.48 for teachers and r=.43 for pupils. Significant correlations were also found between the social skills and competence for each respondent. Although the questionnaires have proved to be valuable in clinical practice, large-scale controlled outcome studies are recommended to assess their sensitivity to change following intervention programmes. The present researcher has taken this into consideration when devising her own check list, which is mentioned in detail later in the chapter. The current study uses the three versions of the questionnaire: parents, teachers and children. It is important to investigate social skills and interaction from the children’s perspective. A concern was raised, when using self-reporting, that is common in individuals of all ages but particularly for children which is the problem of validity; children can tend to conceal the truth and either exaggerate their positive, or underestimate their negative behaviour (Cook and Campbell, 1979; Kassel and Zimmerman, 1993). It is expected to see such a result in the current study and children might score themselves higher than their parents and teachers. In Knott et al’s (2006) study, the children scored themselves lower than the parents in the Spence’s questionnaire, but the areas of weaknesses were the same. This finding supports the reliability of this assessment. Another point to be taken into consideration is that current mood and experience might have an impact on reliability, hence if the assessment were repeated, different answers might be produced. In research with children, it is useful to collect data about the targeted behaviour from parents - as the main caregiver - and other resources such as teachers. That is the purpose of using the three versions of the two questionnaires.
Another concern might be raised as to whether the children have the cognitive ability to judge their own social skills and competence, due to their delay in the TOM (Baron-Cohen, 1995; Happe, 1999). Their ability to recognise other people’s state of mind and the causes of emotions affect their opinion about their own experience (Baron-Cohen and Wheelwright, 2004). Spence’s study has a good correlation between parent, teacher and pupil versions which is one indicator of the validity of the tool. However, this questionnaire was not designed to be used by children with autism. Although it has previously been used with children in the spectrum (Knott et al, 2006), it would be unwise to rely only on self-reporting when assessing the effectiveness of the intervention programme. Social-emotional understanding data were collected in this research through parents, and not through children. If the findings from the self-reporting correlate with the findings from the parents’ checklist, then this could be an indication of the effectiveness of the intervention programme. Not to forget the fact that social skills and social competence in this research are collected through parents and teachers as well.

Validity of the scales was supported through the finding in Spence's study of a significant association between children, parent and teacher responses to the questionnaires, and children’s sociometric status among their peer group (Spence, 1995). Spence measured sociometric status by a simple measure where children asked to nominate 3 classmates who they like the most and 3 classmates who they like the least. Teacher ratings of younger children’s social skills and social competence were significantly lower for children judged to be rejected by the peer group, compared to popular peers, and those of average social status. Similarly, parents’ ratings of their child’s social skills and social competence were significantly lower for children who were rejected by their peers compared to their popular peers. Rejected children were also more likely to rate themselves as being lower in social competence and as having more social worries compared to more popular peers.

The advantages of the Spence questionnaire is that it contains a tool which measures social skills using simple statements, and one which covers the result of these skills in children’s interaction and friendship. This combination serves the current study’s hypothesis - targeting the effectiveness of the
intervention programme on social interaction. The other advantage is the identical versions of measuring the same thing but from different perspectives. It is a chance to investigate how children with ASD view themselves in comparison with their parents and teachers. The disadvantages of this tool are that it was not design for children with ASD, therefore it does not measure the known delay in social skills and social interaction that is associated with autism. The researcher found limited tools which measure social interaction in children with ASD and which measure the change of behaviour during the intervention. Social skills and interaction are normally part of a comprehensive measure of autism. This being said, Spence has been used previously in autism research, and gives a result that could be taken into account (Sofronoff et al, cited in Knott et al, 2006).

Emotional Quotient Inventory: Youth Version, (Bar-On and Parker, 2000).

The third questionnaire was the BarOn EQ measure. Psychologists, school counsellors, social workers and psychiatrists can use it to identify an individual’s strengths and weaknesses in their emotional intelligence, in order to help that individual develop the skills needed for academic, personal, and social success. It is an easy to administer self – report instrument designed to measure emotional intelligent in young people aged 7 to 18 years. It is based on the Bar-On model of emotional and social intelligence, which also formed the theoretical bases of the BarOn EQI (EQ-I; Bar-On, 1997) according to Bar-On emotional intelligence refer to the emotional, personal, and social dimensions of inelegance. It comprises abilities related to understanding oneself and others, relating to people, adapting to changing environmental demands, and managing emotions. It was based on a large sample (N =10,000) English speaking locations in the United States and Canada, gender and age specific norms (4 different age grouping 7 to 9, 10 to 12, 13 to 15 and 16 to 18 years of age). It consists of multidimensional scales that assess core features of emotional intelligence. It has a positive impression scale for identifying individuals who maybe attempting to create an exaggerating positive impression of themselves. The standard score of the scale have a mean of 100 and standard deviation =15. As a guide line the standard scores could be interpreted using the following table.
Table 21: The standard scores guideline

<table>
<thead>
<tr>
<th>Range</th>
<th>Guideline</th>
</tr>
</thead>
<tbody>
<tr>
<td>130</td>
<td>Markedly high - atypically well-developed emotional and social capacity</td>
</tr>
<tr>
<td>120-129</td>
<td>Very high - extremely well developed emotional and social capacity</td>
</tr>
<tr>
<td>110-119</td>
<td>High - well developed emotional and social capacity</td>
</tr>
<tr>
<td>90-109</td>
<td>Averaged - adequate emotional and social capacity</td>
</tr>
<tr>
<td>80-89</td>
<td>Low - underdeveloped emotional and social capacity with some room for improvement.</td>
</tr>
<tr>
<td>70-79</td>
<td>Very low - extremely underdeveloped emotional and social capacity with some room for improvement with considerable room for improvement.</td>
</tr>
<tr>
<td>Under 70</td>
<td>Markedly low - atypically impaired emotional and social capacity</td>
</tr>
</tbody>
</table>

The EQ-i: YV assessment has been subjected to numerous validity studies that demonstrate the appropriateness of the scale structure, both empirically and theoretically. The EQ-I: YV assessment is recommended for both clinical and research environments, correlation with other measures could lead to similar constructs.

The researcher selected the short version that takes 10 minutes to administer, as it is more suitable to the children in the study’s nature, and cognitive ability. The sample in this study is the children diagnosed with HFA or AS, but who do not have verbal language delay or learning difficulties. Therefore they will be able to read and recognise the inventory. The BarOn EQ was composed of 30 questions rated by the children. The response options are: 1 = not true of me, 2 = just a little true of me, 3 = pretty true of me, and 4 = very much true of me. The BarOn EQ is composed of five subscales (intrapersonal, interpersonal, stress management, adaptability, and positive impression) and a total EQ score.

The concern in this case regarding using self-reports and its impact on reliability was as explained above in Spence’s questionnaires. To mitigate this, other resources were used to support these variables, such as parents and teachers. In addition, observation was carried out and analysed by the researcher and a research assistant. Although it is not as reliable as Spence and EQ-i: YV measures, it gives a good indication of the children’s progress and evaluates the rate of their responses.
The five scales of the EQi:YV assessments are: (1) the Intrapersonal Scale which measures the individual’s ability to understand his or her emotions and his or her ability to communicate those emotions to others; (2) the Interpersonal Scale which measures the individual’s ability to have satisfying interpersonal relationships and to understand and appreciate the emotions of others; (3) the Stress Management Scale which measures the individual’s ability to manage and control his or her emotions and to respond calmly to stressful events; (4) the Adaptability Scale which measures the individual’s ability to be flexible, realistic, and effective in problem solving and managing change; (5) total EQ scale is the sum of the numerical rating scale; and (6) the Positive Impression Scale, which measures the extent to which respondents contradict themselves. A standard score in the range of 90 to 110 for each subscale indicates effective emotional and social functioning. A score greater than 110 suggests the presence of enhanced emotional and social skills, while a score of less than 90 suggests that emphasis should be placed on enriching skills in that area (see Appendix 14).

The above subscales require a certain level of cognitive ability to recognise one’s own emotions, emotions of others and the ability to control their emotions. This is a great concern for our sample due to the subtle mind reading ability and other difficulties associated with autism (Baron-Cohen, 1995; Happe, 1999). The children might misinterpret others’ feelings or misunderstand their actions; to this extent, they would not give a true answer to their emotional intelligence. Similar restriction was experienced with Baron-Cohen and Wheelwright (2004) when they investigated empathy using Empathy Quotient of adults with AS. Their participants’ state of mind was a limitation in their study along with the difficulties the AS adults face in explaining others’ behaviour. In addition to the explanation and justification explained above in the Spence questionnaire, this particular assessment has been used for children with autism in other research (Montgomery et al, 2010). The positive impression scale also aids in identifying individuals who may be attempting to create a lower or higher impression of themselves.

The key advantage of the EQi:YV is that it measures the skills that are targeted in the intervention programme. It gives a clear vision of their emotional inelegance therefore a pre- and post-measure
will show the value of the intervention programme. The subscales measure more than one aspect of emotions, with the added bonus of the positive impression scale. The other advantage is that it is standardized over a large population of English-speaking individuals ranging between 7 and 18 years old. The disadvantage of the tool, as mentioned above, is that it relies on the experimental sample’s view of the self, which has its restrictions.

The social/emotional checklist

The purpose of the checklist is to establish a simple tool that contains terms about the children’s social and emotional skills. Its content was designed to test the study hypothesis at pre and post level to determine the outcomes of the intervention.

To choose the appropriate items to be used in the checklist the researcher reviewed research papers related to social skills and emotional understanding, child behaviour screening and questionnaires, and the diagnostic criteria for autism in the social interaction and verbal and nonverbal communication domain. Another source was the standard questionnaires samples available online. Docstoc is an online document store for researchers that contain various assessment tools that could be used in education researches (www.docstoc.com, 2011). The researcher starts by viewing social skills questionnaires and emotional recognition tools then viewed the tools that are designed especially for children with autism. The following outcomes led the researcher to use the checklist:

- To assess social skills the researcher is using the Spence Social skills questionnaire and the social competence. Spence commented in her study that the scale is not tested to confirm its sensitivity to change after intervention programme (Spence 1999). Another reason for devising the check list is that the Spence questionnaire does not assess all the goals the intervention want to achieve such as, the ability to identify emotions through social situates, ability to learn acceptable social clues, ability to control negative emotions and other goals that are explained in chapter 3.

- To assess Emotional understanding the researcher is using the EQi YV. This device does give a general indication of the child emotional and social intelligent but again it does not measure all the outcomes of the intervention programme. For example it does not assess the child’s ability to recognise simple and complex emotions. The EQi YV results finding suggested
using other sources of information and comparing the findings in order to enhance the findings from the inventory (Bar-on, Parker, 2000). Also the EQi; YV is a self-report by the children whereas the checklist is targeted to obtain information from parents as the main caregiver and best resource.

The final checklist contains 34 items. It was best to choose various degrees of choices to assess the responses. The checklist used a three point scale ranging from Usually (2), Sometimes (1), Rarely (0). The maximum possible score is 80 as statement number 17 is a multiple statements.

An initial version was pilot tested. The parents were given the checklist assessment tool and a feedback sheet. They were asked to comment on the following aspects of the checklist: (a) To identify questions that are difficult to understand; (b) To identify if sufficient range of responses were included to answer each question; (c) To record the time spent in completing the checklist; and (d) To opine on the quality of the checklist, and any suggestions that could be taken on board.

The pilot test took 10 to 20 minutes for the parents to complete. They thought that the time required to complete it was reasonable. The responses available for each question were found to be adequate. Most of the questions (92%) were clear and direct. Two parents claimed difficulties in understanding two questions and change was made accordingly. Parents were able to answer all the questions. After receiving the responses, the researcher was able to establish that the replies can be interpretive in terms of understanding the children’s level of emotional and social understanding. Furthermore analysing the results from the checklist would be applicable. The checklist items are presented in appendix 22. Rarely was scored as 0, sometimes as 1, and usually as 2.
Table 22: The composition of the children used in the pilot study of the checklist

<table>
<thead>
<tr>
<th>Age</th>
<th>Sex</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 years</td>
<td>Female</td>
<td>ADHD</td>
</tr>
<tr>
<td>11 years</td>
<td>Male</td>
<td>Under assessment for possible diagnosis of Autism</td>
</tr>
<tr>
<td>12 years</td>
<td>Male</td>
<td>High-functioning autism</td>
</tr>
<tr>
<td>15 years</td>
<td>Male</td>
<td>High-functioning autism</td>
</tr>
</tbody>
</table>

The pilot sample contained different age ranges and ability to identify its usability across children age 7 to 15. Although not all of them diagnosed high-function autism, they all have a level of neurodevelopmental delay. The 34 items in the checklist are compared to the intervention programme objectives that were explained in chapter 3 and presented in table 12.

The advantage of this tool is that it measures the targeted skills thoroughly. Its statement assesses the children’s ability to read and understand simple social emotions, their interpretation of others’ emotions, and their social interaction with family and peers. The pre- and post-test will show the change of behaviour, if any, after the intervention programme. Yet the fact that the tool has been devised by the researcher for the purpose of the intervention has its limitation as it lacks any formal validation.

The final checklist contains items such as; (1) Does s(he) offer help to others if they are hurt or sick?, (2) Does s(he) use greetings to familiar peers and adults?, (3) Does s(he) ask peers to do things with her/him socially?, (4) Does s(he) start appropriate conversations with others?, (5) Does s(he) show pleasure by smiling at others?, and (6) Does s(he) come and give you a hug if you are upset?

For the full checklist see (appendix 22).
4.3.5 - Role of the researcher and her effect on validity and reliability

In all research, the researcher has a degree of involvement that could jeopardise the validity of the conclusions drawn from the study. In most experimental research, the researcher takes a role in collecting data, analysing, drawing conclusions, and ascertaining implications. When analysis is quantitative, the threats are diminished, as the researcher deals with data that are already there and analyses them using a set formula. However, even this type of method has its own threats; there are other factors we cannot control. It is advisable, in quasi-experimental designs, that the person or team who carries out the assessment is different from the person or team who carries out the experimental intervention. In this case, the researcher carried out both the pre- and post-assessment, as such a sharing arrangement was not accessible to the researcher. The researcher carried the pre- and post-assessments using the quantitative method, pre- and post-interviews using the qualitative method, and also conducted the intervention programme. Bias is inevitable in such a case, but several procedures were used to achieve reliability and validity and avoid bias.

The mixed methods design itself is one way to avoid bias. As explained earlier in this chapter, the quantitative measures complement the qualitative ones. If agreement is seen in the results, then this checks for different outcomes. The data analysis, later in this research, sheds further light on this aspect.

Reliability was achieved through the use of equivalent forms of data collecting - if they are carried out and present similar results, then this study can be said to show reliability (Cohen et al, 2000). The present researcher chose four assessment tools in the quantitative method that measure both social skills and emotional understanding. Another way of avoiding researcher bias and achieving reliability as equivalence is the use of an external observer during the experiment. As mentioned above, a research assistant carried out an observation of progress during intervention sessions, and the researcher conducted a progress report as well. If agreement between results is seen, then research reliability is achieved. It is important to mention, here, that the forms of observation of the researcher and research assistant are not the same, but they observed the same behaviour.
When conducting interviews, there is a great chance that bias could appear. Research shows that the interviewee and interviewer (the researcher in this case) can bring their own experience to the interview table (Cohen et al., 2000). In this research, the majority of interviewees are parents of children with autism; the subject is emotive to them, which might attract sympathy by the researcher and divert the course of the interview from its objective. Teachers also can be under stress and emotionally affected. The interview questions were clear and had been set previously; the researcher’s role was to stick to them. They are also formulated in an open manner to avoid leading to any specific response. When interviewing children, the researcher valued and recorded all the dialogue, and did not control the time and setting. As mentioned in this chapter, questions could be asked through playing a simple game. The time could also be split into two interview sessions, depending on the flow of the first interview. Moreover, trust was established through meeting the children a few times prior to the interviews.

4.3.6 - Administration

All assessments were given to the participants, their parents and teachers 2 weeks to one month prior to the intervention. Administration did not require any previous training but parents were given clear instruction about administration and advised to use pencil. It was explained to them that the purpose of the assessment is to obtain more information about the participant’s abilities and skills. They were advised to answer all items and that there was no time limit. Teachers were handed their forms personally. Both parents and teachers were advised to post their response or contact the researcher for collections. The consent form they were given for their children’s participation in the study includes consent about assessment. For the children’s assessments the researcher was present while the children completing it to read any unclear sentence especially the younger age. She explained to the children the information regarding the instructions and giving true responses. The materials needed for administrations were only the forms and pencil.

The Bar-On EQ-I; YV could be administered in paper and pencil format using the MHS Quick Score forms. Both forms (long and short) include all necessary information for administering, scoring and
profiling. The form contains tables that transform raw scores into standardized score. Most respondent completed the long form in 20-30 minutes and the short in about 10 minutes.

4.3.7 - Evaluation of the intervention progress

It was essential to monitor the progress of a new designed intervention programme. The evaluation of intervention programme is described in the next chapter (see chapter five). Below is a summary of methods used for evaluation and a description of the role of the research assistant.

Three methods were conducted:

1. A progress report - a report form was prepared that contained the following sections: (1) Report of summary of activities undertaken in each session; (2) Expected result; (3) Additional work. Further details can be obtained from chapter three (see chapter three).

2. An observation coding - a coding system was designed to observe the responses of each child, and their need for prompting, as follows. Mark each response with: + (correct, unprompted), - (incorrect), NR (no response), or P (prompt). If a prompt is delivered, record the appropriate prompt code in the field marked “Prompt”. Prompt key: V (verbal), M (modelling), Ph (physical) (see table 4, chapter three).

3. Analysis of children’s response observations - to illustrate each child’s response to the activities in all sessions, a rating scale was developed to quantify the responses of children in all activities as follows: correct response with no prompts was given the highest rating of 6; correct response with verbal prompts was given a rating of 5; 4 was given to the correct response with modelling prompts and 3 for the correct response with physical prompts; whereas incorrect response was rated 2, and a rating of 1 was given to the child if he did not respond. Each session of the intervention programme designed for this study consisted of four to six activities (see chapter 3 for more details). Some of these activities were based on sub-activities, and the child’s responses were recorded in each sub-activity. For example: activity two in sessions two and five consisted of five sub-activities and the child’s responses were recorded in each sub-activity then the mean was calculated. Also activity two was based on two sub-activities in sessions three, six, eight and ten. The rating from each sub-activity was recorded and the mean was then calculated. The data will be presented by sessions. Each session will start with the progress report, and then the observation table, followed by a chart that illustrates each child’s response in each activity.
At the end of this section a summary of each child’s mean responses in all ten sessions is calculated, then presented in a table and chart.

4.3.8 - Role of the research assistant

As stated in chapter three (the development of the intervention programme), there was a need to use a research assistant as an external observer, for the purpose of recording the children’s progress throughout the sessions. The assistant used a progress observation form, which had been designed previously by the researcher and is explained thoroughly in chapter three. The researcher’s time constraints and the setting-up of the activities prevented the researcher from carrying out the observation. Another advantage of using an external observer in this way is to eliminate any researcher bias when recording children’s progress (Reynolds et al, 2003). The data collected by the research assistant were compared to those collected by the researcher in the evaluation of the intervention programme. Observation can indeed interfere with the teaching and affect the behaviour of the children; as a result, several procedures were used to eliminate that. A teaching assistant who worked with children with autism was chosen from a local school. She was briefed about the general purpose of the study, but was not acquainted with the aims of the sessions, teaching or activities. Her role was to collect data only and not to support the researcher in any form during the sessions - whether in setting the activities or delivering them. She was introduced to the children in the first session and it was simply explained that she would be writing notes about what happened on that day. If a child attempted an interaction, she was informed not to respond. She was present throughout each of the 10 activities, and she sat slightly behind the researcher, from where she could easily observe each child response without distracting them. Also, she was asked avoid eye contact with the children. By using a set form of observation - with different codes for each type of response (verbal or physical, correct or not; explained in detailed in chapter three, along with how data were collected) - the observation was not based on the assistant’s understanding, or on her point of view. Furthermore, recording the observation helped to permit a systematic analysis after the study (Silvermen, 1993) (see chapter four).
When participants know they are being observed, it is acknowledged that there is a threat of their behaviour “altering” accordingly (Reynolds et al, 2003); however, the nature of participants of this research, their age and the method the observer used for observation eliminate any threat of behavioural change. What’s more, the children were not aware of the purpose or aims of the study.

4.3.9 - Data analysis

The principle aim of the current study was to examine if an intervention programme that teaches social-emotional understanding would improve social skills and interaction. Therefore there is a comparison of the changes from baseline to post-intervention measurement of both groups (the experimental and the control group). The assumption is that any difference in changes between the two groups reflects an effect of the intervention (Cohen et al, 2006; Muijs, 2010). In this quantitative study, the numerical data were collected by transforming the responses for each tool into numbers. To examine the data about the social skills, social competence with peers, BarOn Emotional Quotient Inventory (EQI), and the social/emotional checklist, data were entered into SPSS Statistics and total scores were calculated for each child in each measure. Data were divided into control and experimental groups, and means and standard deviations were calculated to assess each variable. For social skills and social competence, scores are calculated for parents, teachers and pupils, whereas the EQI is done only by the participants and the checklist by parents.

The analysis compares the pre-test scores to the post test for each individual participant. Then the total mean score and standard deviation for the experimental group is compared to the mean score and standard deviation of the control group across the three different variables (parents, teachers and pupils) for each measurement. As reviewed earlier in this chapter, the Spence social skills questionnaire and the Spence social competence with peers did not provide standardization, due to the small norm, but its mean and standard deviation can be compared to those of the current study. This allowed the researcher to use them as a reference point if any development occurs. Because the quantitative method allows for converging the outcomes of one study to another study, this adds an advantage that might support generalization (Coolican, 1999). For the EQi;YV, the standard score is
used to assess the mean score of the current study. SD of the current study is compared with the EQi;YV SD. The analysis was conducted across the subscales of EQi;YV and across the total score.

The social/emotional checklist is analysed by comparing the mean score and SD of the experimental group to the mean score and SD of the control group, along with the difference of the total score between pre- and post-experiment. The midpoint of each scale was calculated, and is shown in each table to separate the high scores from the low scores.

The analysis is presented through an overall table of scores of individual participants at pre- and post-level, as well as by showing the difference between the control and experimental groups with the aid of a data description. Then, each assessment measure is presented individually in tables of scores, and charts, to illustrate the change in scores across experimental group and control group as well as across the three sources. The correlation in the change of all the measures in relation to each other is presented in bar charts for both groups. That is the best way to analyze the relationship between the variables over two periods of time and clearly see the increase or decrease of social skills and emotional understanding.

Low scores are expected for social skills in both groups prior the intervention programme, and a conservative increase after the intervention. The reason for these expectations stem from the limitations in the assessment tools mentioned earlier. Hence, comparison across three resources and correlation across all assessments will shed light on the true value of the current study. The ideal target is to see consensus between all three perspectives.

4.4 - Study two

High-functioning autism is characterised by difficulty in social communication, social interaction and social imagination (Frith, 2003). Despite these similarities, it is also known that every case of high-functioning autism is unique. According to the case study revised at the beginning of this chapter, the scope of the second study will not focus into knowing what problems children with autism have but rather, will identify what is going on their social life and ‘why’ in order to contribute to modifying
their behaviour. The aim of the case study is to collect ‘authentic’ understanding of children with autism. The researcher has identified two children from the intervention group to emphasise this. This case discussion will enable to understand the unique factors that contribute to the outcome of the child’s social skills.

The case studies were done in two main environments; at home and school. The researcher interviewed the parents to identify the children’s home environment, and the teachers to identify the school environment. The children were also included in an interview to identify their perspectives. Previous studies encouraged using different unstructured open-ended interview methods with children to explore specific problem areas (Merrell, 2008 and Silverman, 2010). According to Merrell this method is useful with children who have social and emotional difficulties and to some degree they are able to tolerate interviews. By designing open-ended questions and preparing various ways of prompting the interviewee, this method could give more truthful statements. This perspective could be seen from an emotionalism point of view (Silverman, 2010). Silverman believes in emotionalism, both interviewer and interviewee are ‘subjects’ in the study and interaction between them should be encouraged to obtain the desired statements. In this study, although the interviewer became familiar with the participants at the time of the interview, she was not interacting with them during the interview or sharing her opinion or thoughts and the open-ended questions follow a set of order to cover all the areas of the study. Perhaps the way we analyse the data could lead to the study paradigm. Constructionist perspectives come from the type of knowledge the study want and the meaning of it (Silverman, 2010). This perspective comes near the study objectives. The researcher is interested in knowing the participants responses and the meaning of their statements in relation to the nature of autism in order to contribute more knowledge.

4.4.1 - Aims of case studies

- To demonstrate individual variations between children with high-functioning autism and how these affect the outcomes of the intervention.
To identify and explore patterns of similarities of social communication difficulties and emotional understanding of the 2 cases.

To collect an authentic insight about their emotional understanding and how it affects their social abilities and their social interaction with peers.

4.4.2 - Selection Criteria

- Cases that were found to be unique and have significant delays in social interaction.
- Children have a sibling to enable study of family relationships.
- Parents’ cooperation with the researcher to talk to them and help to access the children’s teachers. Furthermore, to gain access to the neurodevelopment assessment report done previously through assessment team for the initial diagnosis.
- Teachers’ cooperation

Based on these selection criteria the following two cases were identified:

Case 1 is an 11-year-old boy who was diagnosed when he was 9 years and 6 months and has a challenging behaviour. According to his mother, there were no concerns regarding his behaviour until they moved from Iran to England. The sudden change triggered all the symptoms of autism. He finds it difficult to interact with his peers and prefers to be alone and read during playtime in school. He has a good relationship with close parents and siblings but does not have any friends. He receives a lot of verbal bullying that led him to staying away from interaction. He refuses any attempts from parents or teachers to help him make friends. He follows rigid routine and difficulties when change occurs.

Case 2 is a 10-year-old boy who was diagnosed when he was 6 years old. He is keen for social interaction and would initiate at a certain level to play with someone from school. However, he displays inappropriate social and emotional behaviour that causes avoidance from friends. He has a good relationship with his mother only but dislikes any kind of interaction with his sister. He gets upset very quickly and expresses his negative feelings toward others while they are present. He finds it difficult to empathise with others and fails to read their emotions.
Table 12: Demographic data of the two cases

<table>
<thead>
<tr>
<th></th>
<th>Case 1</th>
<th>Case 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child’s name</td>
<td>Freddie</td>
<td>Oliver</td>
</tr>
<tr>
<td>Age</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>Male</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Asian /any other Asian background</td>
<td>White British</td>
</tr>
<tr>
<td>School</td>
<td>London/ Ealing borough</td>
<td>London/ Ealing borough</td>
</tr>
<tr>
<td>School year</td>
<td>Year 6</td>
<td>Year 5</td>
</tr>
<tr>
<td>SEN stage</td>
<td>School action plus</td>
<td>School action plus</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>Atypical autism PDD-NOS</td>
<td>Asperger’s syndrome/ food allergies/ asthma</td>
</tr>
<tr>
<td>Type of intervention</td>
<td>IEP, twice a week with SENCO, touch typing, OT tools</td>
<td>IEP, 3 mornings teacher assistant, social skills training at school ,OT exercise and touch typing</td>
</tr>
</tbody>
</table>

4.4.3 - Interviews

The (a) parents, (b) teachers and (c) children were interviewed by the researcher in view of getting an understanding about the child’s home environment, school environment, and the child’s strengths and weaknesses. Interviews were performed in two periods. Period one was providing detailed interview prior to the intervention. Period two, took place two months after completing the intervention to investigate the effect of the intervention programme on their social communication and emotional understanding. A shorter follow up interviews were designed for parents, teachers and children.
Parents were interviewed with an open-ended questionnaire in view of answering the following:

- Social background of the family and their parenting style.
- Child’s developmental milestones from infancy to school.
- Strengths and difficulties across the range of developmental area (physical, social and emotional, verbal, and cognitive development).
- The child’s level of emotional understanding.
- Child’s ability to empathise and connect with others.
- The child’s level of social skills and peers relationships.
- The relationship with his/her siblings and parents.
- The child’s daily activities.

The parents interview questions were designed to covered the following areas: developmental and medical history, family life, diagnosis, descriptions, causes, social-emotional understanding, intervention, and services to support child and family (see appendix 15 for the full interview questions).

The researcher will be conducting interviews with the SEN teachers and SENCOs at school in view of answering the following:

- The service provision for the child.
- Childs’ social life within the school environment, and responses in different school events.
- Child’s relationship with his/her teachers and peers.
- Child’s academic achievement and impact of difficulties on his/her learning.
- Child’s Strengths and Difficulties.
- Child’s perspective

The teacher’s interview questions were designed to cover the following areas: perception, causes, diagnosis, social emotional difficulties, impact and intervention (see appendix 16 for the full interview questions).

The two children will be interviewed with open ended questions in view of answering the following:

- Child’s strengths and weaknesses of his/her social and emotional abilities.
- The impact of social and emotional delay on the social interaction with others.
- Child’s relationship with his/her family members and friends
The children’s interview equations were designed to cover the following areas: home life, relation with family members, school life, intervention and child’s strengths and weaknesses in social-emotional understanding. The interview questions are available in (Appendix 17)

4.4.4 - Reliability and validity

All interviews were tape-recorded face-to-face. The audios tapes were carefully transcribed and presented in a long extract of data in the (See Appendix 18). Two sets of data were compared to see if they corroborate each other quantitative and qualitative). This form of comparisons as mentioned at the beginning of this chapter is called ‘triangulation’. Another way of practicing validity through triangulation is by comparing the data collected across different sources; parents, teachers and children.

General instructions:

- Researcher used verbal positive reinforcement to encourage sharing information.
- Researcher used various prompting tactics.
- The order of questions and number was flexible to fit the interview progress.
- Each question in the child’s interview was accustomed according to the child’s level and experience. Interviewing children took place after they adapted to the researcher.
- The child’s interview was informal and indirect and could use games, writing, drawing and other ways adapted from the sessions.

The child’s interview took one hour, and was split into two sessions depending on the child’s cooperation.

The questions asked in the interviews, and the areas that were covered, are summarised in the Tables 14-16.

4.4.5 - Follow-up interviews

Questions were created to study the effect the training programme might have on the degree and quality of the children’s interaction with others including parents and friends. The questions highlight
the objectives of intervention programme and concentrate on two areas; emotional understanding and social interaction. Parents, teachers and the children themselves were asked after 2 months of completing the intervention.

Questions for Parents’ follow up interview:

- Describe your observation on the child’s general social interaction with others since completing the sessions?
- How is his social interaction with his current friends?
- What is the child’s effort in maintaining his friendship? E.g. initiating interaction and conversation with friends.
- Did the child gain new relationships? Describe how?
- Describe the child’s ability to express his own feelings.
- Describe the child’s ability to recognise your feelings and the feelings of others’?
- In general do you feel that the intervention programme has an impact in your child’s social life?

Questions for teachers’ follow up interview:

- How is the child interaction with children in playground and in class?
- How does he cope when the task requires group work?
- Does he use new social skills to overcome his delay?
- How does he express his feelings (anger)?
- Does the child understand your emotions and the emotions of others’?

Questions for children’s follow up interview:

- What have you learn from the sessions we’ve done together
- We looked at many facial expressions some you already knew and some are new. How did it help you with friends
- We also learned if other friends feel sad, depressed or angry so if a friend of yours has such a bad feeling what can you do to help him?
- Where you able to use the skills we learned with your family?
- We all have bad days and feel upset or sad or even angry we learned during sessions some great techniques to express our feelings in a good way so we don’t hurt other people. Were you able to do that?
- What are your favourite activities from the sessions?
- How is your relationship with your friends at school
- Have you made new friend
- What do you say or do if someone said something rude to you
- How is your relation with your teacher?

4.5 - Data analysis

There is not one method to analyse interviews as the raw data are manifold, and this could lead to various interpretations. It is important to decide the starting point and the questions requiring answers. The research hypothesis was to examine the effect of the intervention programme on children with high-functioning autism. Interviews were chosen because they provide an insight into the children’s real social and emotional development and how they see the world. The follow-up interviews highlighted the change in the children’s behaviour and the effect of the intervention on their social relations and their interactions with family and friends. At this point, it is important to choose a method that will reflect the aims of the research. The researcher reviewed methods available in present literature, and decided to choose cross-case analysis.

Cross-case analysis identifies patterns of similarities and difference in the cases studied in order to give more understanding of the phenomenon targeted (Miles and Huberman, 1994). The patterns that are organised in themes in this research will run across the two cases studies (coding and themes are explained below and in the case study analysis chapter). Miles and Huberman (1994) believe that cross-case analysis provides data which helps in wider generalizations and gives deeper value and explanation of the phenomenon. As reviewed in the literature review chapter, children with autism share characteristics in many aspects; but it is also known that each individual is unique in their own way. This method of analysis tested the cases against theoretical aspects of autism, such as social
skills deficit and TOM. It examined similarities and different in patterns of behaviour prior and after the intervention.

In the current research, cross-case analysis method was studying the following:

- Strengths and weaknesses for each child;
- Impact of difficulties;
- Interventions made by the researcher;
- Impact of the sessions of this intervention;
- Impact of other interventions.

The analysis was approached through the following steps:

The interviews were recorded using a digital voice recorder, and the content was transcribed. Using the outline provided by the areas of the interview given above, the transcripts for each child were separated then read few times carefully, then a summary was rewritten for each area. For example, answers of parents regarding family life were combined and summarized for Freddie’s and Oliver’s mothers (see chapter 7 case study analysis). Next, a thematic analysis was performed for each source. Data were broken down into themes, reflecting the areas covered by the interviews and the child’s assessment report. A set of tables (see the results section in chapter 6) was then developed in order to highlight the major differences and similarities between the two children. The cross-case analysis was for each item investigated in the interview. The researcher divided each area in a theme and summarised them in tables where she analysed them thoroughly. The data in the tables are the result of the case study.

The second method of analysing the qualitative data was to summarise the follow-up interviews with parents, teachers and children; then, the interviews were outlined individually, according to the areas covered. Each source of data was broken down into themes reflecting the areas and presented in a set of tables. The final method of analyzing the quantitative data is to reflect the mixed-method model by combining the data from the case study with the standardized measures and checklist developed for the quantitative study. Two detailed tables were set out for each child to outline similarities and
differences between the two - both in terms of pre- and post-intervention measures as well as pre- and post- qualitative data. Deep descriptions were written under each table explaining similarities and differences.

In summary, the study presents data in three ways. First it analyses the children’s strengths, weaknesses, and their levels of social skills and emotional recognition, before receiving the intervention programme. Second, it analyses the children’s social skills, emotional recognition and their strengths and weakness after receiving the intervention programme. The last method is presenting the overall picture, where it combines data drawn from the first study, the quantitative study and the case study - at both pre-test and post-test level.

**4.6 - Ethical issues**

The ethical principles guiding study 1 and study 2 were based on literature from BERA ethical guidelines and the ethical approval form. Ethical approval documents are in (Appendix 5). All stages of the research process follow the ethical principles of consent, confidentiality, privacy, and anonymity for the children to be included in the study sample. All children will be recruited through the local education authority. The participants were assigned to one of two groups, the intervention and the control group, according to the conventional sampling procedures. Children in the control group were advised that they are in a waiting list until collecting the data for the research. After the post-test level the researcher delivered the intervention programme for the control group.

Experimental practices comply with the strict codes of conduct as devised by both the British Psychological Society and the American Psychological Association. The researcher carried case studies as well, conducting interviews with their parents, teachers and the children themselves in order to identify the individual factors that are responsible for the outcome of the intervention.

Educational research aims to extend knowledge and understanding of all areas of an educational activity. The British Educational Research Association (BERA) states that all educational researchers should conduct their researchers in an ethical manner. The main aim of the research is to evaluate an
Participants, their parents and their teachers were assured to have the right to assume the records of their data be safeguarded and used as anonymous data only by the research staff. Since the participants were below the legal age group, prior to commencing the study, a consent form was sent to parents and their approval needed to be sought. All the study sources were assured that all research data and results will be kept confidential. There is no intention to identify individual pupils or professionals in the final report and all data collected will not be disclosed to unauthorized third parties. Identities of participants will not be revealed or published with results. For the purpose of writing the thesis fictional names were used.

The parents were educated on the research process, including the need for their children to be participating in the educational activity. They were informed of how the results will be disseminated, and how it would benefit future research. (Appendix 7) They were offered the right to withdraw from the research at any point. They were told of the methods of data storage and guaranteed of anonymity and confidentiality of the data that was being collected.

Due to the nature of participants, children with autism need to be informed about the nature of the study, the aims and the schedule of the activities in time to prepare them emotionally. These will be delivered through a pre session that took place one week before the training began. It will introduce the children to each other and to the researcher and other adult’s helpers and a brief description for the programme was given.

All participating children have been diagnosed prior to the study through the local authority team to meet the conditions defined by ‘the Diagnostic and Statistical Manual of Medical Disorders (DSM-IV) criteria for autism or the Autism Diagnostic Interview-Revised (ADI-R) criteria for autism (Lord, Rutter, and Le Couteur, 1994). These details were obtained from the participants’ parents. They were given an information sheet that contains important information about the children. Information
includes age, diagnosis, type if support the child receive, favourite activities, favourite rewards, medical condition and allergies. Parents were given the opportunity to provide the researcher with any important data they wish to report.

The researcher was granted ethical approval by the ethical committee of University of Exeter, School of Education and Lifelong Learning. Further, a CRB clearance was also obtained by the researcher as she would be in close contact with children of age group 7-11 years. (Appendix 19)

The training programme took place in a safe nearby school class for one group and a church hall for the other group and all procedures meet the health and safety regulation. The tools used are safe stationary tools such as pens, pencils, colors and papers. The participants look at pictures of different people with various facial expressions or photos that contain acceptable social situation such as family or school event. A pc program that is professed through official educators was used in the training. The study is a quasi-experimental design in which measurements of the dependent variable carried out. All measurements are reliable and appropriate to children’s age and condition. All sessions were carefully designed following educational approaches and principals. There is certainly no intention on the part of the researcher to discuss sensitive, upsetting or embarrassing matters or cause distress to the participants during the intervention. Should this happen the intervention was prepared to be terminated and the child’s parents will be contacted should the distress persists.

All data will be stored in the researcher’s personal computer and only the researcher has access to the data.

4.7 - Conclusion

This methodology chapter has set out the structure of the research. It started by giving details about the study design using both quantitative and the qualitative methods. For each study a description of sampling, type of data collection, procedures, type of data analysis and the ethical issues were covered. The chapter also covered critique of the assessment used in study one and its origins and
validation. Another detailed description included the areas covered in study two and the interviews questions. The following chapter will give details of evaluating the intervention programme through analysing the progress of the intervention and through presenting the quantitative data analysis
Chapter 5 - Evaluating the intervention programme

5.1 - Programme process evaluation

The intervention programme was completed in 10 sessions. Children of the experimental group received the pre-assessment test using the measures summarised in chapter four. Prior to the intervention, the researcher had met the children on three occasions. The first time was in the initial meeting when the sample was recruited, the second time was while collecting the initial information from their parents and the third time was an individual meeting while they were completing the Spence 2 questionnaires and the EQi. Those meetings allowed for a brief interaction with the children, where they could get used to the researcher. During such meetings the researcher gave the children brief descriptions of the sessions and the type of activities that would be carried out.

To evaluate the intervention progress, the researcher conducted three methods:

- **A progress report** - a report form was prepared that contained the following sections: (1) Report of summary of activities undertaken in each session; (2) Expected result; (3) Additional work. Further details can be obtained from chapter three.

- **An observation coding** - a coding system was designed to observe the responses of each child, and their need for prompting, as follows. Mark each response with: + (correct, unprompted), - (incorrect), NR (no response), or P (prompt). If a prompt is delivered, record the appropriate prompt code in the field marked “Prompt”. Prompt key: V (verbal), M (modelling), Ph (physical).

- **Analysis of children’s response observations** - to illustrate each child’s response to the activities in all sessions, a rating scale was developed to quantify the responses of children in all activities as follows: correct response with no prompts was given the highest rating of 6; correct response with verbal prompts was given a rating of 5; 4 was given to the correct response with modelling prompts and 3 for the correct response with physical prompts; whereas incorrect response was rated 2, and a rating of 1 was given to the child if he did not respond. Each session of the intervention programme designed for this study consisted of four to six activities (see chapter 3 for more details). Some of these activities were based on sub-activities, and the child’s responses were recorded in each sub-activity. For example: activity two in sessions two and five consisted of five sub-activities and the child’s responses were recorded in each sub-activity then the mean was calculated. Also activity two was based on
two sub-activities in sessions three, six, eight and ten. The rating from each sub-activity was recorded and the mean was then calculated. The data will be presented by sessions. Each session will start with the progress report, and then the observation table, followed by a chart that illustrates each child’s response in each activity. At the end of this section a summary of each child’s mean responses in all ten sessions is calculated, then presented in a table and chart.

5.2 - Session-by-session summary of activities undertaken and children’s progress and observations

5.2.1 - Session one

Activities: 1- Getting to know each other. 2- Identify simple emotions. 3- Robbie the Robot (PC interactive game). 4- Match the emotions. 5- Happy to meet you/sad to leave you.

Progress report

The children saw each other for the first time. They were hesitant about getting along with each other, but very keen to start the activities. They all behaved in an appropriate manner, and respected both the researcher and each other. Activities were presented as planned. During the snack break, Oliver did not eat due to his allergy. Although I explained to him that the snack was safe for him, he was still worried about the ingredients. In activity 2, the children were able to recognise the first set of simple emotions- the real people’s photos, but needed prompting with the black and white photos.

Freddie was serious and needed verbal assurance to remove the stress. He fidgeted a lot on his seat, and Oliver left his seat few times. In the last activity, Jack was confused about the researcher’s tone of voice. He remarked,"I am confused, I cannot tell from your voice if you are really happy to see us, or you are being sarcastic.” Oliver replied that he could tell from the photo she was holding. The researcher briefed them on how to recognise the simple emotions from the voice and mentioned that, in future sessions, they would play games to learn this skill more.
The researcher explained briefly to parents the home activity work and encouraged them to support their children but allow them to do it themselves.

**Expected result**

Research suggests that children with autism are able to recognise simple emotions (e.g., Sigman, 1997, Tarvis, 2001 and Baron-Cohen, 1995), however the children in the current group found difficulties with two simple emotions (happy and angry) when they were presented in black and white drawings. Oliver and Jack noted that the wrinkles on the forehead look the same. The researcher explained the different features that they need to observe, paying particular attention to wrinkles in the forehead, the mouth and the position of the eyebrows. The children were able to pass the matching emotions task. This could be seen on the fourth activity when the children were asked to match the two sets of photos, the real people and the drawings.

**Additional work**

The researcher needed to ensure that Oliver learned the difference between angry and happy in the following session particularly as they are simple emotions. Since it was the first session, the researcher did not focus on aiding the children to interact with each other until they know each other. This needed to be emphasised next session. The researcher noted the need to bring in supported cushions to the next session to control fidgeting.

Coding is: + (correct, unprompted), - (incorrect), NR (no response), or P (prompt). If a prompt is delivered, record the appropriate prompt code in the field marked “Prompt”. Prompt key: V (verbal), M (modelling), Ph (physical).
Table 13: Coding of children’s responses in all activities

<table>
<thead>
<tr>
<th>Child</th>
<th>Activity 1</th>
<th>Activity 2</th>
<th>Activity 3</th>
<th>Activity 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freddie</td>
<td>+</td>
<td>++</td>
<td>+++</td>
<td>++</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oliver</td>
<td>+</td>
<td>+ P</td>
<td>+++</td>
<td>++</td>
</tr>
<tr>
<td>Prompt</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jack</td>
<td>+</td>
<td>+ P</td>
<td>P + +</td>
<td>++</td>
</tr>
<tr>
<td>Prompt</td>
<td>V</td>
<td>V</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 5: The differences between the three children in their responses to the activities in session one

The figure above shows a high rate of appropriate responses in the first session. Jack and Oliver both needed verbal prompts in the second activity when the new set of photos was presented. Jack also needed a verbal prompt in activity three. Although it was not expected that the children would need prompting with simple emotions, they were presented with novel objects, and a delayed response could be due to lack of generalizing. Another reason could be due to it being the first session. The
positive responses in the last activity justify the children’s ability to recognise simple emotions once they grasp the skills of reading facial features.

5.2.2 - Session two

Activities: 1- home activity follow up, 2- the feeling game, 3- definition, 4- Mr. Face.

Progress report

It was a hard start, compared to the first session. Freddie and Jack were already in the room but Oliver was feeling agitated and refused to enter the class. He said, “I don’t like Jack and he annoys me,” when Jack was within earshot, but he did not react to it. The researcher did not notice any negative interaction between them in the previous session. The researcher asked his mother to speak to him out of the room. He started to be calmer about it then the researcher spoke to him as well, and asked him to give himself a chance to get to know Jack and said that she would make sure Jack behaves. The researcher mentioned briefly that he could express his feelings without hurting Jack’s own feelings. The researcher planned to use such an incident as an example of a natural acquiring situation in future sessions. The researcher did not let them to sit next to each other at the beginning.

Three activities only were taught, in addition to the home activity revision, because they required longer time. On a few occasions, Jack left his seat and wandered around the room and needed to be reminded of the rewards at the end of each activity.

In the first activity (the home activity), the children were very excited to share the photos they brought (all were from magazines). The researcher assured here, that all the children recognised simple emotions to enable them to move to the second level. All children were able to match the photos they brought to the set of photos she used in the previous session.
The children engaged actively in the second activity, the computer game. In the first minute only Oliver did not listen to the instruction and moved the mouse a lot, then the researcher explained the rules and they all listened.

The third activity, the dictionary game, was easy to follow and the children were keen to read from the dictionary. A minor modification was made here, in using the computer to read the definition of each emotion (from http://dictionary.reference.com/) with added reading sound as the children were more interested in the computer than the book.

The fourth and most enjoyable was the “Mr Face” activity. They requested to take extra time to play around creating silly faces. Although each child should do the task individually, the other children were interfering – helping verbally - and on two occasions, physically, by choosing the shape and sticking it to the face. The researcher needed to remind them of their roles, and that it should be done individually. As planned, the researcher gave each child three emotions. Once the children stuck the parts to the face making the emotion requested, they were asked to observe what features made up this emotion.

**Expected result**

In relation to problems in interaction, it was expected for children with autism to experience such difficulties and be slow in their adaptation to the group. Being in small groups though eases the process. The difficulties then vanished once the children engaged. They did not need any support with the definition task as it focused on verbal ability and the sample children all had high verbal ability.

**Additional work**

Although the children enjoyed the Mr Face activity, they needed support, particularly in the eyebrows’ shape and explanation of how they change in each emotion. It was planned to review this in the next session to consolidate learning.
Table 14: Coding of children’s responses in all activities

<table>
<thead>
<tr>
<th>Child</th>
<th>Activity 1</th>
<th>Activity 2</th>
<th>Activity 3</th>
<th>Activity 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freddie</td>
<td>+</td>
<td>P + + + +</td>
<td>+ + + +</td>
<td>+ + P</td>
</tr>
<tr>
<td></td>
<td></td>
<td>V</td>
<td>Ph</td>
<td></td>
</tr>
<tr>
<td>Oliver</td>
<td>+</td>
<td>+ - + + +</td>
<td>+ + + +</td>
<td>+ + P</td>
</tr>
<tr>
<td></td>
<td></td>
<td>V</td>
<td>Ph</td>
<td></td>
</tr>
<tr>
<td>Jack</td>
<td>+</td>
<td>+ + _ + +</td>
<td>+ + +</td>
<td>P + +</td>
</tr>
<tr>
<td></td>
<td></td>
<td>V</td>
<td>Ph +</td>
<td></td>
</tr>
</tbody>
</table>

Figure 6: The differences between the three children in their responses to the activities in session two

As shown by the figure, the ranges of mean responses were quite close to each other. Freddie’s mean ranged from 6 to 4.6, Oliver’s from 6 to 5, and Jack’s range is 6 to 5. They all needed verbal prompting in the second activity. It taught the children slightly more complex emotions - such as disgusted, afraid and surprised. Although it used real faces of people rather than symbols or drawings, the set of emotions were new and required understanding of the social context. All three children needed physical prompting in the last activity - Mr Face. The shapes of the facial features were confusing and the children needed the researcher to hold their hands and direct them as to where to
stick the shapes. Table 2 shows that Freddie got his first two attempts correct then the last one wrong. Oliver received prompting in the first attempt, then made two correct attempts. Jack needed prompting firstly, and then also made two correct attempts.

5.2.3 - Session three

Activities: 1- Home activity. 2- Matching and acting simple and complex emotions. 3- Paper plate faces. 4- Emotions hunt. 5- Mirror and camera. 6- Body language.

Progress report

At first, Oliver would not tolerate being with Jack in the session, but this time he made sure to express his dislike out of the room so Jack could not hear him. The researcher requested permission from his mother to speak to him, and then he was convinced to join in. Once the activities started he was fine. Also the researcher supplied a bouncy ball for Oliver to sit on, to limit his leaving the seat, which also encouraged him to join in more. The school provided a seating cushion for Freddie’s sensory movement.

The first activity was reviewing the home activity sheet. Children wrote their choice of simple emotion, and read the sentences about ‘when you have felt this emotion’ and ‘I noticed someone felt …’. This activity did not take much time so the researcher gave a chance for each child to choose two of the emotions they brought from the first session’s home activity. The children were very excited to share. Jack only did one emotion; he was prompted to remember any situation where he observed an emotion.
The children were able to follow the rules of the second activity, picking two cards and not showing them to the group. However, they needed prompting when they acted to the rest of the group. Each child got three turns. If the other two children did not guess then the researcher would mention things like, ‘How would your eyebrows or mouth look?’

In activity three, the children were enthusiastic to use the different cut-out shapes to create an emotion. There was a good degree of interaction between them. They were able to identify the correct face feature shape for their chosen emotion.

The children took 5 minutes for a drinks break while the researcher placed the photos for all the emotions learned around the room to prepare for activity four. Then the game instructions were explained and they started looking around the room with their magnifying glasses to hunt for the emotions on their list. It was the most fun and enjoyable activity since the intervention started. They were rushing to compete with each other to finish the list, but they were also laughing and kind to each other. Oliver interacted positively with Jack. This was a positive improvement in his behaviour.

In the fifth activity, the children were able to imitate the emotion and enjoyed watching each other in front of the mirror. Each child chose 3 emotions. For some emotions, the children gazed longer into the mirror (such as surprised, confused and embarrassed). Their faces were more rigid or flat. The children thought that they were doing the expression but when the researcher modelled it out to them, they noticed the difference. Also when the other children could not guess, they were asked to look at themselves in the mirror to recognise their expressions and try to add more clarity. However, they were able to do well when they repeated the emotion - adding more expressions using body language.

In the last activity, they interacted actively with each other. There was not a task that requires responses to observe, but the children were encouraged to discuss the scene and all the different body clues that could lead them to guess the feeling. The children were viewing the different body language and facial expressions on TV, then were asked to guess the social situation in the scene. The observer was coding their interaction and involvement in the discussion rather than their guessing.
Expected result

It was expected that by the third session the children would do better at recognising emotions through facial expressions, in addition to identifying the involvement of body language. From observing the children’s interaction, there was an improvement in accepting each other. They still did not initiate the interaction, but when the researcher guided them they responded. There was a significant interaction initiation in the emotions hunting game. The instruction did not require teamwork yet - as a matter of fact they were competing - however they interacted with each other positively by laughing together, and commenting to each other on the task. One positive incident was when Jack bumped his foot while searching around the room for an emotion picture, and Freddie stopped and comforted him.

Additional work

The children mostly chose little toys from the prize box at the end and selected things such as colouring books. The researcher notes that more toys needed to be available for rewards.
Table 15: Coding of children’s responses in all activities

<table>
<thead>
<tr>
<th>Child</th>
<th>Activity 1</th>
<th>Activity 2</th>
<th>Activity 3</th>
<th>Activity 4</th>
<th>Activity 5</th>
<th>Activity 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freddie</td>
<td>++</td>
<td>+++</td>
<td>+</td>
<td>+</td>
<td>++ P</td>
<td>+</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oliver</td>
<td>++</td>
<td>+ P +</td>
<td>+</td>
<td>+</td>
<td>P ++</td>
<td>+</td>
</tr>
<tr>
<td>+Prompt</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jack</td>
<td>+ P</td>
<td>+ P +</td>
<td>+</td>
<td>+</td>
<td>++ P</td>
<td>+</td>
</tr>
<tr>
<td>Prompt</td>
<td>V</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
<td>M</td>
</tr>
</tbody>
</table>

Figure 7: The differences between the three children in their responses to the activities in session three

As seen in the figure, the children had higher mean responses in this session. From the six activities, verbal prompting was delivered to Jack and Oliver in the second activity and modelling prompting in the fourth activity to all the children. One explanation for this difficulty is that this activity allowed the children to experience expressing the emotions themselves rather than recognising them in others. By the third session, it is possible that the children improved their ability to learn the different
emotions. Jack also needed verbal prompting in the first activity in sharing his home activity sheet. It could be due to the fact that it required the child to read what emotion he wrote on the sheet and despite being in the third session, Jack is still slightly shy in comparison to the other 2 children.

5.2.4 - Session four

Activities: 1- Home activity feedback. 2- Emotion dictionary. 3- Emotions thermometer. 4- Emotions transporter video. 5- Act and guess. 6- My emotional journal.

Progress report

The researcher was able to collect the camera from Freddie and Jack a day before the session and develop the photos for the children to review together. It was agreed with Oliver’s mother to provide him with photos from home, because he was not able to bring the camera. At the end they all had nice shots - either new from the disposable camera or photos from home. The researcher chose a few photos and they took turns to speak openly about them.

There was not a specific correct response on the emotion dictionary activity, but the observer recorded their participation while doing the task. It was noticed that they all got along together. They were able to match the name of the emotion with the face that represented it. As planned, each child did five, along with the researcher – making a 20-page book. It was planned to use this in other sessions for reference.

In the third activity, the list of words was presented to children for the emotions thermometer. The children did not know the meanings of livid, elated and content, and so the dictionary was used to look them up, before they wrote them on cards and added them to the emotion box from the last activity. Then they went on doing the task. Freddie took longer to stick the words onto the thermometer in a gradual manner. So when Oliver completed his own work he started to interfere with
Freddie, wanting to help, but Freddie did not like being helped. Jack also took a longer time to complete the activity but was able to match them gradually as explained.

At the beginning of the fourth activity, the emotions transporter video, Freddie objected to the level of the video, saying that it was like Thomas the Tank Engine, and it was for little kids. The researcher explained that it was of a higher level than that, and that it had faces of real people and stories to match. It also had interactive questions at the end so they had to watch. Then, it was a relaxing time for the children to watch the video. They watched one episode then took turns answering the questions at the end. The children enjoyed using the remote. The second episode started, but they noticed that it was not as interesting as the first, so the observer had to fast forward to the next one which was more challenging.

The fifth activity was similar to the mirror activity from the previous session. There was improvement and more correct modelling responses, though two emotions were not quite obvious to the group. The researcher brought the mirror so that the child could observe himself. Freddie felt a little defensive when prompted and claimed that they were not looking at him. The researcher also commented, asking the children not to exaggerate the emotions. Jack, for example, made exaggerated facial expressions and was reminded of the emotions thermometer. It was explained that judging the level of emotion depended on the event. They were told that in a future activity they would practice that.

The emotions journal in the last activity did not require specific responses. The researcher explained, as an introduction, the importance of knowing our own feelings. The introduction was cut short and the journal was given to the children, because Oliver complained of being bored. Then they listened to the instructions and replied that they understood what they needed to write when they got home.

**Expected result**

Oliver progressed significantly in accepting the other children and taking into consideration Jack’s feelings when expressing his own. In general, the number of correct responses increased in comparison to the earlier sessions. It was noted that if the children continued learning at the same
pace, positive results in the post-assessment were predicted. It was too early to predict a significant effect in social skills and social competence, particularly because the children at this stage were only learning emotional recognition aspects. It was expected that with the future sessions involving different social situations and dealing with negative emotions, the children would be more stimulated.

The children were satisfied with the prizes given at the end.

Additional work

The researcher had to keep the children’s photos until the following session to be used for another activity. Although the transporter DVD was piloted with children of different age who did not object to the level of the video, children in this group needed more challenging episodes.

Table 16: Coding of children’s responses in all activities

<table>
<thead>
<tr>
<th>Child</th>
<th>Activity 1</th>
<th>Activity 2</th>
<th>Activity 3</th>
<th>Activity 4</th>
<th>Activity 5</th>
<th>Activity 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freddi e</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>++</td>
<td>+ P +</td>
<td>+</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oliver</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+++</td>
<td>+++</td>
<td>+</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jack</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+++</td>
<td>P + +</td>
<td>+</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>M</td>
<td></td>
</tr>
</tbody>
</table>
Figure 8: The differences between the three children in their responses to the activities in session four

The figure of the fourth session presents high rate responses of the children. All children’s means range from 6 to 5.3. It should be noted that in activities 1, 2, and 6 the observer recorded the children’s participation only as the teaching was through observing, listening and sharing. In the third activity they were recorded when the task was completed, and emotions were correctly placed in the correct area of the thermometer. In the fifth activity, Freddie needed a verbal prompting to add more details when acting an emotion, then made better attempts on the following trial. Oliver did not need support and the children were able to guess what he was acting, and Jack needed the researcher to model the emotion he needed to do on the first attempt then made two appropriate attempts. The last activity the recording was for their listening and interaction.

5.2.5 - Session five

Activities: 1- Home activity feedback. 2- Find the emotions in the box. 3- Listen to the voice, 4- Emotion transporter video. 5- Guess the feelings through my voice.
Progress report

There was not any sheet to present from home activity, but the researcher asked the children about the emotions thermometer, and their experience of using it. Freddie and Oliver told interesting stories. Jack did not use it, as he was not feeling well in the last few days before this session and instead was scored based on his interaction. Then they were asked about their journal and they all had written once in it. The researcher came up with a certificate that she would give to reward good effort in writing about their feelings, to motivate them, then they were reminded of the task.

The second activity was drawing emotions the researcher called for from a box in front of the children. The children viewed the photos from the past session (the disposable camera photos were from the activity done in the last session), and it was easy for them to draw from the box the required emotion. In the middle of this activity the researcher modified it by adding a new set of photos to make it more challenging. Jack was slightly slower searching for the photos but he was still able to recognise them. He found it difficult to browse the photos while in the box, so he preferred to lay them out on the table and when the researcher called out an emotion, he could easily look at them then pick. Freddie came next - in terms of speed- but he did not want to use Jack’s technique. All children were capable of finding the correct emotion.

In the ‘guess the feeling from the tone of voice’ activity, the children followed the rules by not looking at the researcher’s face when listening to the sentences, but Oliver and Freddie guessed when it was not their turn. The verbal prompting coding was only for not following the game’s rules, but all the children responded correctly when it was their turn. They were reminded to respect each other’s turns and of how their interfering might prevent the other person from learning. Learning to empathise was a target in the sessions, therefore, when this kind of behaviour occurred, the researcher used it as an example for the children to look and guess what the other person was feeling. For example, “Freddie, when its Jack’s turn and you answer instead of him, looks at his face. Does he look happy
and satisfied?” If he says no, then a comment added to care for each other. Another example would be, “Would you like Oliver to interrupt when it’s your turn and answer on your behalf?” and so on. When a child interrupts, a new sentence is presented.

The fourth activity was watching and answering from the transport video. It was observed that the children get pleasure from holding the remote and answering the quiz at the end of each episode. They conformed throughout the activity. The observer recorded their responses at the end, when answering the questions. Each child had two turns answering the quiz.

Although the pictures chosen that divided the paragraphs in the fifth activity do not represent the exact emotion in the dialogue of the story, the children were able to understand the game. Actually, they quite enjoyed reading the story in an emotional voice that could mean another feeling. They found it funny, but it was intended that their understanding of the concept would help them to understand what people mean and feel, dependent on the tone of voice as a tool people use to reflect the explicit or hidden feeling.

**Expected result**

The children reached the targeted skills on today’s session. They were able to answer correctly on all the activities with no prompt needed. The interaction between the three children was improving and at some points they collaborated to interrupt the teaching process. They were reminded to follow the rules, but this kind of behaviour was considered by the researcher to be typical among friends who unite together to do the same thing. Whilst the testing and analysing of the pre- and post-assessment would later give a more accurate indication of any improvement in their social aspects, at this point it was felt that the harmony between the children and the researcher in the sessions could be interpreted as a positive development in the social area.

**Additional work**
The researcher reminded the children of the importance of turn-taking and being kind to each other next session.

Table 17: Coding of children’s responses in all activities

<table>
<thead>
<tr>
<th>Responses to activities</th>
<th>Activity 1</th>
<th>Activity 2</th>
<th>Activity 3</th>
<th>Activity 4</th>
<th>Activity 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freddie</td>
<td>+</td>
<td>+ ++ + + +</td>
<td>P + +</td>
<td>+</td>
<td>+ +</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oliver</td>
<td>+</td>
<td>+ + + + +</td>
<td>P + +</td>
<td>+</td>
<td>+ +</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jack</td>
<td>+</td>
<td>+ + + + +</td>
<td>+ + +</td>
<td>+</td>
<td>+ +</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 9: The differences between the three children in their responses to the activities in session five

The figure illustrates the children’s level of responses in doing the activities. Their progress in this session is higher than previous sessions. It should be noted that the slightly lower response mean for
Oliver and Freddie was only for not following the rules in the game, when they interrupted while it was not their turn. They did still manage to recognise the feeling from the activity.

5.2.6 - Session six

Activities: 1- Home activity feedback. 2- Career emotion. 3- PC game activity. 4- Interview. 5- Bingo.

Progress report

The children progressed in the homework activity. Unlike the previous session, they all brought the sheets with them and wrote their experience in non-verbal communication (facial expression, tone of voice, and body language). They came with ideas other than what was explained to them during previous sessions.

In activity 2, each child answered 2 questions about how a doctor, teacher, etc., would feel. They were able to imagine themselves in the person’s situation and give the correct guess. The second part of the activity was writing the scenario. They had some difficulties coming up with events or situations. The researcher gave them general examples of things that could happen to them during work. Then they did the activity and chose the correct emotion for each scenario. The first 2 codes were for answering 2 emotion questions and the last 2 codes were for coming up with scenarios that could trigger an emotion. Examples from texts they wrote are as follows:

Oliver: If I was a builder and someone asked me to build a house with four rooms. I worked really hard but when I finished I forgot the fourth room. I will be very angry if they will take the house down.

Jack: I want to be a restaurant owner. If everyone comes to the restaurant and orders the same dish I will feel worry that the ingredient might finish and I have to go out and buy some more.
‘Robbie the Robot’ game was the third activity, on the computer. The researcher felt that the game level was not challenging enough at this stage, but they had tried it in the first session and enjoyed it. It is programmed to make a cheering sound when they make the correct choice and the researcher believed this to be rewarding, and what encouraged them the most. One incorrect response by Jack was due to rushing to answer. He was reminded of the importance of looking at all the different facial features to recognise the feeling, and also to watch the story because different events will lead to different emotions.

The fourth activity was role playing. Children were to choose a job and create questions to ask the person who worked. They chose computer programmer and came up with 10 questions. Then they took turns roleplaying the interviewer and the computer programmer.

In the second job, the children were creative and came up with characters that created a lot of fun. There was a fruit basket that the researcher had for a snack, and Oliver suggested that he wanted to interview Mr Apple. The researcher encouraged the other children to choose other fruit and make a scenario between them. They drew eyes, mouth and hair on the fruit. Then they wrote 10 questions all about Mr Apple’s feelings. Mr Apple was a professor played by Oliver; Freddie was Mrs Orange, Mr Apple’s female co-worker and Jack wanted to be the reporter. The dialogue was semi-structured by the researcher. If it drifted to other topics the researcher directed it back to the taught skills. Examples are taken from the conversation:

Mr Apple: I would like to invite you to dinner Mrs Orange.

Mrs Orange: No, I am busy.

Mr Apple: If you don’t come with me you will be sorry. I am not going to invite you again.

The researcher: What do you think Mr Apple feels? Could he express his sadness to Mrs Orange nicely? Could Mrs Orange say no nicely, without hurting his feelings?

Mrs Orange: Well sorry, I am busy because I have an interview now.
Mr Apple: I have the same interview. How about we have dinner together after the interview?

Examples of the question for the interview they created:

The interviewer to Mr Apple: Do other fruits get angry with you at work?

The interviewer to Mrs Orange: What makes you frustrated?

The children requested to keep the characters in the fridge and play with them in other sessions.

Bingo was another fun game and a good opportunity to summarise their understanding of the link between social situations and feelings. Some sentences, the children did not agree on one feeling, or had to ask a question. For example, ‘You get to go see a movie’; one said that it would depend on the movie, while another said that it depends on who is coming with me. Some of the sentences had to be rephrased to be clearer, for example, ‘You get to go see a movie that you like’. They all took turns listening to the situation said in small sentences then had to say what this situation makes them feel. Each child had four turns.

**Expected result**

The children were able in this session to recognise that feelings develop from certain situations. The variety of the activities that emphasise on relating emotions (own and other people) to real world situation seem to improve their understanding of the link between emotions and social situations. This could be seen in the interview activity when they improvised the Mr Apple and Mrs Orange characters. They also created different scenes to fit the scenario such as university, restaurant and stage.

**Additional work**
It was difficult to read Freddie’s handwriting in home activities. In the future sessions it was planned to ask him to type it, and then email it back.

Table 18: Coding of children’s responses in all activities

<table>
<thead>
<tr>
<th>Child</th>
<th>Activity 1</th>
<th>Activity 2</th>
<th>Activity 3</th>
<th>Activity 4</th>
<th>Activity 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freddie</td>
<td>+</td>
<td>++ - p</td>
<td>++</td>
<td>+ p</td>
<td>+ + + +</td>
</tr>
<tr>
<td>Prompt</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oliver</td>
<td>+</td>
<td>++ - p</td>
<td>++</td>
<td>+ +</td>
<td>+ + + +</td>
</tr>
<tr>
<td>Prompt</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jack</td>
<td>+</td>
<td>++ p +</td>
<td>- +</td>
<td>p +</td>
<td>+ + + +</td>
</tr>
<tr>
<td>Prompt</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 10: The differences between the three children in their responses to the activities in session six

From this figure it can be seen that the children needed verbal prompting in the activities that needed imagination and creativity of situations in life that cause certain emotions. In the first activity, their responses were positive. In the second activity, all three children had correct responses for two questions about what emotion this situation could cause. Oliver and Freddie did not respond when asked to create 2 scenes - for the job they chose - that could result in a certain emotion. All three children needed verbal prompting and stimulating questions from the researcher, but they were able to
come up with 2 scenes each. In the computer game activity, the children were mostly able to choose the correct answer but Jack had one wrong answer.

In the fourth activity, Jack and Freddie needed verbal prompting while taking turns interviewing each other. They needed direction again to ask questions to learn more about the interviewee’s own emotions.

In the last activity they all chose the correct emotion on the bingo sheet. The high mean responses in this activity indicated improvement in the children’s ability to relate social situations to emotions, as this activity required the children to listen to short sentences that explained certain situations and for them to choose what could be the appropriate response.

5.2.7 - Session seven

Activities: 1- Home activity feedback. 2- Guess the feeling according to situation. 3- Guess the feeling from desire. 4- Role plays script. 5- Problem solving. 6- Support a friend.

Progress report

Only Jack brought the home sheet with him. The researcher reviewed with the other 2 children verbally. The home activity was to identify things in their life that made them feel excited, sad, frustrated, or scared. She gave them the sheets, and some time to write about it. Examples of what they wrote follow:

Freddie: I get excited when a new game is about to come out. I get scared coming back home if it’s dark.

Oliver: I get frustrated when the other boys don’t pass me the ball. I don’t feel sad about anything.

Jack: I am scared that someone will hurt my hands or step on me, this always happens in assembly. I get excited when my birthday comes because I get many presents.
The beginning of activity two was teaching the instructions, then they were asked to respond to the pictures. They were able to say what the person was feeling (the face in the picture does not show the emotion but it has situations that reflect emotions), and it was only when they are asked why this person would experience such a feeling that the children needed longer to think of the situation. Still they managed to give mostly appropriate answers.

Emotions according to desire were a new area of teaching in the third activity. The researcher needed to ensure that they understood the concept of desire. When the picture showed a fulfilled desire, the three children were able to quickly choose the happy card, but when the desire was not fulfilled they had to gaze longer at the picture before answering. Also, one child responded, “It depends on what the child wants,” even though the picture illustrated the child’s desire. The researcher prompted him to look at the picture that show what the child wants to be able to know what the child feels.

The fourth activity contained a few steps; firstly, the children were given all the photos that illustrated feelings. The children were able to group the different photos to one emotion/genre. This implies that the children were skilled enough to recognise the different facial expressions between people that correspond with the same emotion. The photos also had other body language that represented different emotions, and the children were able to recognise them. Each photo could tell a story and that was when the second part of the activity began. This part requires imagination and creativity from the children to come up with situations that cause emotions. The first recording in this activity is based on the children’s responses. They were enthusiastic, responded positively and worked together. The second and third recordings were about their ability to write or tell a story for the scene. They did their writing, but showed limited imagination with regard to factors that could cause emotions, and needed to be prompted with questions to motivate their thoughts. It is worth mentioning they were creative at the end.

In the fifth activity, the children experimented with their own negative feelings. Each child gave few examples of things that make them sad, angry, happy and afraid. Then when the researcher drew a sad face on the board inside a circle, they worked as one group and each child gave suggestions as to how
to make the sad face happy, and the suggestions were put around the circle. They needed prompting to give more ideas. Examples of what they contributed were, “Think happy thoughts; talk to a friend; play a computer game, and talk to my mother”.

The second part was done individually. Firstly, they were given a chance to imagine that their best friend was upset to set the scene, and then they were asked to draw the friend’s face in the middle and write strategies to help him be happy. They repeated the same ideas they suggested for themselves from the last activity, then the researcher asked them to think about their friend, what he/she likes, and things that could cheer him/her up like toys, treats places or people. Freddie, for instance, said, “I would tell her to go and play on the trampoline,” which was the thing he would do if he was upset, so the researcher asked him, “Does your friend like to go on the trampoline? “He replied, “Yes, every time she comes to visit, she wants to go out in the garden, but what I want is to play computer games.” They showed good signs of empathy and enthusiasm to help, but they needed to be reminded about the other person’s view.

Extra activity

Mr Apple was taken out from the fridge, and the children set a stage and did a performance. They did not want to plan it but they were encouraged to write the main ideas of the scene and the parts. The researcher did not interfere with the progress of the acting. This activity was not coded in the observation as it was considered a free activity for the children.

Expected result

The children felt slightly uninterested in the situation and the desire activities, and wanted to rush to the next activities. However, they were able to pass the questions and choose the correct answer. They were probably bored because it was not active, and after a few pictures, it became repetitive. The
researcher was aware of this as it was one of the limitations mentioned in the literature review about the available interventions. The researcher adapted this activity and chose the most interesting pictures presented in the study (Howlin, Baron- Cohen and Hadwin, 1999). In addition, unlike the original study this activity was part of a session that had other varieties of activities, and not an entire session.

When the children wrote acceptable events or situations in the role play scripts activity, it gave an indication of their accomplishment. The children were using the skills they had learnt so far to succeed in knowing the relationship between emotions and social situations. Also, their ability to come up with different suggestions and ideas to turn negative feelings to positive ones, give a degree of functioning in the real world and making sense of the surrounding. There was a good level of cooperation between the children in the group work.

There was appropriate social interaction between them in terms of turn-taking, listening to each other’s ideas and initiating a conversation. It was more obvious in the last activity, when the researcher did not guide it. It lasted 10 minutes before the parents came, and they agreed to wait for 10 minutes more until the children finished.

The researcher observed Oliver asking his mother to invite Freddie to play with him at home.

**Additional work**

The researcher noted the need to add strategies of dealing with negative feelings into the next session.
**Table 19: Coding of children’s responses in all activities**

<table>
<thead>
<tr>
<th>Child</th>
<th>Activity 1</th>
<th>Activity 2</th>
<th>Activity 3</th>
<th>Activity 4</th>
<th>Activity 5</th>
<th>Activity 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freddie</td>
<td>+</td>
<td>++++</td>
<td>++++</td>
<td>+ P +</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oliver</td>
<td>+</td>
<td>+ P ++</td>
<td>++ P +</td>
<td>+ P +</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td>V</td>
<td>V</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jack</td>
<td>+</td>
<td>++ P +</td>
<td>P ++ +</td>
<td>+ P +</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td>V</td>
<td>V</td>
<td>V</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 11: The differences between the three children in their responses to the activities in session seven**

The figure above presents the mean score of responses of all the children. The range from 6 to 5.6 indicates a high mean score for their responses during the session. In the responses less than 6, the children needed verbal prompting. In none of the activities did the children need other types of prompting. Although the activities were higher level than previous sessions - as they required understanding of social situations and linking them to emotions - all the children had a positive rate of appropriate response.
5.2.8 - Session eight

Activities: 1- Home activity feedback. 2- Likes and dislikes. 3- Building relationships. 4- Caring attitude. 5- Best behaviour award.

Progress report

The first activity was the home sheet, which was a follow-up on what they learned regarding problem-solving. The children gave acceptable suggestions to solve their emotional problems.

Examples are taken from their sheets:

Freddie: When I feel confused, I ask my mother to help me.

Oliver: When I feel angry, I think of good things so I don’t shout.

Jack: When I feel angry I like to stay in my room and colour.

In the second activity, the children gave long ‘likes and dislikes’ lists. They were accepting showing and sharing their feelings. While they were writing, the researcher noticed that they only put objects in the list so she suggested that they could include other things, like people or places. They were able to realise that there are different causes of good and negative feelings. Also finding things in common in their lists helped them to connect to each other. The first response recorded their writing of the list and the second coding was for their discussion together. The researcher grouped Oliver and Freddie to share the list and Jack shared his with the researcher. Examples:

Oliver’s list. Likes: pizza, the computer, Cubs, sweets and my Mum and Dad. Dislikes: <<sister’s name>>, having allergy, not having food, being told off, my sister not following the roles.
During discussion with the partner, Oliver moved his sister’s name from dislike to like list. Freddie suggested that he could tell her to follow the game’s rule, so they could play together.


During discussion, Jack moved one school mate to a new list he made, titled ‘normal feeling’.

The third activity was individual work. Each child wrote suggestions of verbal and non-verbal communication methods to start a conversation or make new friends with no prompting. The researcher emphasised the importance of reading other peoples’ feelings. Samples of their writing:

‘Sit, listen and find things in common, introduce yourself, smile at them and wait until they smile back, go up to someone and say hi, say your likes and dislikes.’

In the fourth activity, children gave appropriate replies when they were asked questions about the photos that showed people giving or receiving help. They took turns saying what each person is feeling and why, how the caring person is helping to make things comfortable for others, and what the caring behaviour makes the other person feel. Then individually, each wrote a few suggestions to help his friend then placed them together in the paper. Although it was individual work, putting all the ideas together gave them a sense of teamwork. Again, a sample of their writing follows:

‘Tell them it’s mean and not to do it again, tell off them, ignore it.’

In activity five, the researcher first explained to the children that bad behaviour affects the people around us and upsets their feelings. When they looked at each picture they could easily say what the person is feeling, but they found it difficult to imagine what could cause this. They gave answers outside the photo like, "He is upset because his mother did not give him sweets,” when the cause is clearly another person’s behaviour, as could be seen in the photo. They needed support to point out the other person and what he/she could be doing to cause the feeling. This explains the number of prompts the children received in the first two attempts. Then the researcher gave them the example of
when they first met, and without pointing to a particular person, the researcher said, “Sometimes we meet people that we don’t like but we should not say it to them because we might hurt their feelings. We need to think of smart ways to deal with these emotions.” She asked them to give examples if they are grouped with someone they do not like. Another example was given when the researcher gave them fruit during snack time in one of the sessions; one child was disgusted and remarked, “I hate fruit!” The researcher used the board and put a title of ‘how can we say no to things suggested by other people in a nice way’. Each child gave 3 good suggestions. Examples of ideas they said are:

Walk to the person and say no but thank you; say no but explain why (like you are not hungry); if you sit next to someone you don’t like tell your teacher but don’t be bad to this person.

**Expected result**

When the children learned simple and complex emotions, body language, tone of voice, situations and desires behind emotions and all the previous skills, the children gained more strength to identify their personal emotions and express their feelings in an appropriate manner. They also improved their empathy towards others.

**Table 20: Coding of children’s responses in all activities**

<table>
<thead>
<tr>
<th>Child</th>
<th>Activity 1</th>
<th>Activity 2</th>
<th>Activity 3</th>
<th>Activity 4</th>
<th>Activity 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freddie</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td>P + + + +</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Oliver</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td>+ P + + +</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Jack</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td>P+ + + +</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>V</td>
</tr>
</tbody>
</table>
Figure 12: The differences between the three children in their responses to the activities in session eight

This figure shows that all the three children in the experimental group made progress in their emotional understanding. The mean score was six in activities 1, 2, 3, and 4. They all received verbal prompting in the last activity. They did give explanation of why the person is feeling ‘sad’ or ‘angry’, but their answers were not illustrated in the pictures. When they were reminded to look at the picture and try to recognise the situation they were able to give appropriate responses. The other three attempts were also appropriate suggestions of saying no nicely.

5.2.9 - Session nine

Activities: 1- Home activity feedback. 2- Relationship map. 3- Emotional cards. 4- Real life situation from the emotional journal.

Progress report

Discussing and revising the home activity was the first activity; the researcher read what they wrote and put them together on the board. The activity was to come up with roles when replying to negative
behaviour from another person. She combined the ideas they wrote with other ideas they added in the session. Here are some examples from their responses:

‘Know your own feelings, do not speak if you angry - wait until you are calm, make them know how you feel and tell someone you trust.’

The second activity was a relationships chart. The children engaged positively and wrote the different names in their categories. The researcher discussed with them how some names belonged to more than one category and asked them to give examples from their own charts.

The third activity was a board game. It combined the children’s understanding of emotions and their ability to act upon their feelings. It was a revision of what they had learnt. They listened to the game roles then played it nicely. The children answered correctly to the ‘how would you feel’ question, but some gave inappropriate answers to what they would do and needed to be prompted. For example, your new video game is not working, Jack said, “I will hit the computer.” The children took more than 8 turns to complete the game, making it difficult to code each one, therefore the observer only recorded the first 5 responses during the game. They gave appropriate responses, and even the promptings were mostly because the question did not apply to the child and the researcher had to modify it. For example one question said, “Your mother is not feeling well and you want to go to the store”. A child replied, “Sometimes my mother lets me go by myself, I live near the store,” so the teacher re-asked, “You want to go to the store that is not near you,” to direct the child to the problem area.

In the fourth activity, the children chose two scenarios that happened to them from the emotion journal they have been working on since the fourth session. The children needed to be reminded to explain to the group what the situation was, so they could guess the emotion; the researcher had to arrange the turns. The children communicated appropriately by listening to the person who read his situation, the next child would then guess what this situation made him feel and say an empathetic response.
Sample of situations and responses:

Oliver: I am careful not to eat fish because I have an allergy to it, but one day at school my lips were swollen suddenly then my throat started to hurt. I was in pain, and I hate pain. The teacher took me to the welfare and I was injected my IP allergy pen.

Freddie: Were you scared?

Oliver: Not really.

Freddie: Maybe you had fish in your lunch.

Oliver: No I told you I don’t eat fish but someone had tuna in his lunch and grabbed the door knob then I came after him and touched it.

Freddie: I feel sorry for you need to wipe every door knob in school.

Freddie: A kid called me big ears.

Jack: You were sad.

Oliver: Ignore him.

Freddie: I went to see high schools for next year; I want to be in the one near my house.

Jack: I hope you get to be chosen.

Jack; I was playing with my sister in the garden, she tripped over but mother said that I did it.
Oliver: You felt angry.

Freddie: I say go to your mother and tell the truth.

**Expected result**

Doing the second activity (the relationship map) enabled reflection on the children’s learning about feelings and emotions. Samples of conversations and questions that happened during this activity follow. Freddie put a name in the ‘friends’ category then erased it saying, “He is not my friend anymore because he is rude to me.” Then Oliver told him, “You should ignore him,” and Jack said, “Tell him how you feel then he will stop.” Another example was when Jack put a name in the others category then commented, “She is not my friend really, she is my mother’s friend but she is nice to me and I think she can be my friend.”

There was a significant interaction in the real life situation game, as well as plenty of kind responses from one to another when they spoke about a bad situation.

**Table 21: Coding of children’s responses in all activities**

<table>
<thead>
<tr>
<th>Child</th>
<th>Activity 1</th>
<th>Activity 2</th>
<th>Activity 3</th>
<th>Activity 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freddie</td>
<td>+</td>
<td>+</td>
<td>+ + + + +</td>
<td>+ +</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oliver</td>
<td>+</td>
<td>+</td>
<td>+ P + + +</td>
<td>+ +</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td>V V</td>
</tr>
<tr>
<td>Jack</td>
<td>+</td>
<td>+</td>
<td>P - + + +</td>
<td>+ +</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td>V</td>
</tr>
</tbody>
</table>
Figure 13: The differences between the three children in their responses to the activities in session nine

In this ninth figure, Freddie scored the highest mean responses in comparison to the other two children, making appropriate responses in all the activities in this session. Oliver scored slightly lower, receiving one verbal prompting in the third activity, but scoring six in the rest of activities. Jack had one wrong response and one verbal prompting but all other responses were acceptable. In general the range response was from 6 to 5.

5.2.10 - Session ten

Activities: 1- Guess the emotion. 2- Mr Face. 3- Down the memory lane. 4- Matching scenarios to emotions. 5- Sharing the journal.

Progress report:

In the first activity each child was asked to act emotions. The children acted out the emotion perfectly. The researcher brought the mirror, but they did not need to use it as often. The researcher did not model any emotion. A few times, the children acted the feeling and when the others could not guess it
the researcher asked them to do a variety of movements or body language to help the other children to
guess. For example, Jack and Freddie had the embarrassed and shy card respectively. They lower their
heads and look down. The other child, depending on whose turn it is, confused it with sad once only.

The second activity was Mr Face, as in the second session. Each time a child chose an emotion from
the emotion box the other child placed the pieces on Mr Face to create the expression. They were able
to perform the expressions properly. Each child got 2 turns.

The researcher gave each child a collection from the photos they took and randomly gave them out.
They spend a good length of time, laughed at some photos, and had good recall when remembering
the occasion when the photo was taken. Two coding for this activity were for answering and another
was for their interaction and participation. They were not asked about all the four photos, as they
wanted to have more time chatting about them.

The last activity was reading 10 scenarios to the children. They were able to dig in their box of
emotions and draw the correct response. This time as well, Jack needed the cards to be spread out
outside of the box for easy access.

**Expected result**

The children proceeded without prompting, in line with good progress. It was intended to choose the
most fun activities, as it was the last session.
Table 22: Coding of children’s responses in all activities

<table>
<thead>
<tr>
<th>Child</th>
<th>Activity 1</th>
<th>Activity 2</th>
<th>Activity 3</th>
<th>Activity 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freddie</td>
<td>+   +</td>
<td>+ + +</td>
<td>+</td>
<td>++++++++++</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oliver</td>
<td>+   +</td>
<td>+ + +</td>
<td>+</td>
<td>++++++++++</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jack</td>
<td>+   +</td>
<td>+ + +</td>
<td>+</td>
<td>++++++++++</td>
</tr>
<tr>
<td>Prompt</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 14: The differences between the three children in their responses to the activities in session ten

The figure illustrates the high level of performance from the children in the last session of the intervention programme. The children were able to identify emotions in this session from photos as well as from short sentences. Another performance they have done is making the correct expressions in the Mr Face activity.
5.3 - A summary of each child’s responses on the activities in sessions according to observation

As seen in the previous observation tables, each session had between 4 and 6 activities. Some of these activities were based on sub-activities and the child’s responses were recorded in each sub-activity. The rate of each sub-activity was recorded and the mean then was calculated.

Table 23: Freddie’s mean responses on activities in all sessions

<table>
<thead>
<tr>
<th></th>
<th>Activity 1</th>
<th>Activity 2</th>
<th>Activity 3</th>
<th>Activity 4</th>
<th>Activity 5</th>
<th>Activity 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session 1</td>
<td>M= 6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 2</td>
<td>M=6</td>
<td>M=5.8</td>
<td>M=6</td>
<td>M=5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 3</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=5.3</td>
<td>M=6</td>
</tr>
<tr>
<td>Session 4</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=5.6</td>
<td>M=6</td>
</tr>
<tr>
<td>Session 5</td>
<td>M=6</td>
<td>M=6</td>
<td>M=5.6</td>
<td>M=6</td>
<td>M=6</td>
<td></td>
</tr>
<tr>
<td>Session 6</td>
<td>M=6</td>
<td>M=4.75</td>
<td>M=6</td>
<td>M=5.5</td>
<td>M=6</td>
<td></td>
</tr>
<tr>
<td>Session 7</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=5.6</td>
<td>M=6</td>
<td>M=6</td>
</tr>
<tr>
<td>Session 8</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=5.8</td>
</tr>
<tr>
<td>Session 9</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 10</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in table 24, Freddie’s responses throughout the sessions were high, often with a rate of (6), meaning that in most activities he managed to respond correctly with no prompts. This could be seen clearly in all activities of session one, whereas in session two, Freddie needed a verbal prompt in one of the sub-activities of the second activity; this mainly was due to introducing complex emotions in this activity. On the other hand, he still managed to answer 4 out of five trials correctly. He also needed physical prompting in the last activity of this session for the same reason. In addition - unlike the previous activity, where the children need to recognise the emotions on photos or faces on computer - this activity required the children to demonstrate the emotion by attaching the facial features to the model. In session three, he needed prompting in the last sub-activity of activity five
which is relevant to the fact that he finds it difficult to model complex emotions on his face, as this activity requires, and the researcher needed to prompt him once by modelling to him the appropriate expression. The same level of response was administered in session four in activity five; Freddie managed to act two appropriate emotions but needed verbal prompting to show more change in facial expression.

In session five, Freddie had positive responses in all the activities but he needed prompting in activity three for not following the rules and rushing to answer when it was not his turn.

In session six, Freddie required verbal prompts in one sub-activity in both activities two and four. This is relevant to the fact that these activities require appropriate skills in linking situations to emotions as well as having good imagination skills. The verbal prompting encouraged Freddie to respond positively in the other sub-activities, with the same target in this session. Freddie showed improvement in situation- and desire-based activities in session seven, which can be seen in activities 2 and 3. Also, he showed improvement in activities that require dealing with negative emotions and empathising, as seen in activities five and six. Freddie required verbal prompting in one of the sub-activities of activity four for the same reason as in session six - difficulties of imagining the situations that lead to emotions. Improvement in Freddie’s emotional understanding skills is clearly seen in session six when he gave positive responses in all the five activities, although he needed verbal prompting in one attempt out of five in activity 5. In this activity, Freddie gave possible explanations that could cause emotions, but the explanations were not present in the photo. Once he was prompted to choose what was seen in the photo he was able to respond positively.

However, Freddie was able to respond correctly without any prompts in all the activities of session nine and ten.
From the figure above, it appears that Freddie’s responses were 6 in almost all the activities in all sessions, as he responded correctly with no prompts. However, the figure also showed that Freddie needed mostly verbal prompts to motivate him to respond correctly, which is relevant to the fact that Freddie confused some emotions with each other mainly from the eyes’ and brows’ shape. Another factor was his difficulty in the imagination area. When the activity required the child to think of possible situations that caused emotions, Freddie needed verbal prompting to stimulate his thinking.

From my observations, Freddie showed fast learning skills, which allowed him to grasp the teaching concept. He also has a high understanding of others’ feelings that helped him to relate to others and show empathy. This enabled him to benefit mostly from the activities in all sessions and explains the higher rate of his responses.
Table 24: Oliver’s mean responses on activities in all sessions

<table>
<thead>
<tr>
<th></th>
<th>Activity 1</th>
<th>Activity 2</th>
<th>Activity 3</th>
<th>Activity 4</th>
<th>Activity 5</th>
<th>Activity 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session 1</td>
<td>M=6</td>
<td>M=5.5</td>
<td>M=6</td>
<td>M=6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 2</td>
<td>M=6</td>
<td>M=5.2</td>
<td>M=6</td>
<td>M=6</td>
<td>M=5</td>
<td></td>
</tr>
<tr>
<td>Session 3</td>
<td>M=6</td>
<td>M=5.6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=5.3</td>
<td>M=6</td>
</tr>
<tr>
<td>Session 4</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
</tr>
<tr>
<td>Session 5</td>
<td>M=6</td>
<td>M=6</td>
<td>M=5.6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
</tr>
<tr>
<td>Session 6</td>
<td>M=6</td>
<td>M=4.75</td>
<td>M=6</td>
<td>M=5.5</td>
<td>M=6</td>
<td></td>
</tr>
<tr>
<td>Session 7</td>
<td>M=6</td>
<td>M=5.75</td>
<td>M=5.75</td>
<td>M=5.6</td>
<td>M=6</td>
<td>M=6</td>
</tr>
<tr>
<td>Session 8</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=5.8</td>
</tr>
<tr>
<td>Session 9</td>
<td>M=6</td>
<td>M=6</td>
<td>M=5.6</td>
<td>M=6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 10</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As seen in table 25, Oliver’s responses throughout the sessions were high, with a rate mean of (6), meaning that in most activities he managed to respond correctly with no prompts. This could be seen clearly in all activities of sessions four and nine, and most of the activities in the other sessions. Oliver needed verbal prompting in session one, when he was introduced to a new set of simple emotions. In session two, Oliver did not answer correctly in one of the sub-activities of activity 2 due to the fact that the activity had a mix of simple and complex emotions. However, with verbal instruction Oliver was able to respond correctly in the rest of sub-activities. Activity five required the children to physically choose the appropriate facial features, such as eyes and mouth, to create emotions; Oliver needed physical prompting in one attempt out of three to show the emotion, as he confused the eyebrows’ shape. In session three, Oliver needed verbal prompting in one sub-activity of activity 3 due to the fact that he had difficulty in showing his emotions, and was either exaggerating his expression or did not show enough emotion. The group was therefore unable to guess the emotion. This weakness can be seen in activity 5 as it required the same ability. However, Oliver was able to learn from modelling and verbal prompting and responded correctly in the rest of this activity.
As mentioned, Oliver did not need any prompting in session four and was able to recognise simple and complex emotions as well as acting them. Session five showed exclusively positive performance, even with one verbal prompting - due to not following the instruction and respecting others’ turns. In session six, Oliver did not give an appropriate situation that could cause emotion in one sub-activity but with verbal prompting he was able to write an appropriate scenario of such a social situation. Progress in learning to link situations to emotions was seen in activities 4 and 5 as they acquired this skill and Oliver managed to respond positively. Session seven contained activities that taught situations; Oliver answered correctly in activity 2 but needed longer time and verbal prompting, to think of reasons for the seen emotion. Also he needed verbal prompting in one sub-activity in activity 3, due to the fact that Oliver could not recognise the desire behind one emotion from the illustrated picture. Oliver showed limited imagination skills in activity 4 and needed verbal prompting to stimulate his thinking. Oliver has high responses in 4 activities of session eight; however he needed prompting in one sub-activity of the last activity. This is relevant to the type of activity that required understanding of the situations that caused emotions and Oliver needed to be prompted to pay attention to everyone in the situation and identify the person and the act that caused the negative emotion. Oliver also needed verbal prompting in one sub-activity in session nine which was board games. Oliver was able to know the emotion depending on the situation, but he required prompting on giving appropriate actions. However, he did not need any prompting in the last session.
Figure 16: Oliver’s responses in all activities in the ten sessions

Figure 16 illustrates the high level of responses Oliver performs to in most of the activities. He required verbal prompting in all the sub-activities where he did not respond (6); once, he needed modelling, and another time he needed physical prompting. This is due to the fact that he had difficulties recognising complex emotions in the first and second sessions, as well as difficulties recognising the surroundings of the emotions. When Oliver is prompted to pay attention to others’ feelings he was able to gain emotional recognition skills, and give appropriate suggestions on how to support others if they have negative emotions. The positive responses demonstrated Oliver’s ability to express certain emotions, as well as learning the skills required to link emotions to social situations.
Table 25: Jack’s mean responses on activities in all sessions

<table>
<thead>
<tr>
<th></th>
<th>Activity 1</th>
<th>Activity 2</th>
<th>Activity 3</th>
<th>Activity 4</th>
<th>Activity 5</th>
<th>Activity 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session 1</td>
<td>M=6</td>
<td>M=5.5</td>
<td>M=5.6</td>
<td>M=6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 2</td>
<td>M=6</td>
<td>M=5.8</td>
<td>M=5.6</td>
<td>M=5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 3</td>
<td>M=5.8</td>
<td>M=5.6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=5.3</td>
<td>M=6</td>
</tr>
<tr>
<td>Session 4</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=5.3</td>
<td>M=6</td>
</tr>
<tr>
<td>Session 5</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td></td>
</tr>
<tr>
<td>Session 6</td>
<td>M=6</td>
<td>M=5.75</td>
<td>M=3.5</td>
<td>M=5.5</td>
<td>M=6</td>
<td></td>
</tr>
<tr>
<td>Session 7</td>
<td>M=6</td>
<td>M=5.75</td>
<td>M=5.75</td>
<td>M=5.6</td>
<td>M=6</td>
<td>M=6</td>
</tr>
<tr>
<td>Session 8</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=5.8</td>
</tr>
<tr>
<td>Session 9</td>
<td>M=6</td>
<td>M=6</td>
<td>M=5</td>
<td>M=6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 10</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td>M=6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From Table 26, it can be seen that Jack was able to respond positively in all activities in sessions five and ten. Also he was able to respond correctly in most of the activities across the board. However, the number of times Jack needed prompting is higher than the other two children in the study. In session one, Jack was able to recognise simple emotions in activity 2 but needed verbal prompting when presented with drawing photos as well as verbal prompting in one sub-activity of activity 4. This is due to the fact that it was the first session and Jack did not learn to recognise these emotions. Jack required verbal prompting in three sub-activities of session two. The first prompting was in the feeling game when complex emotions were introduced, but with the prompting, he was able to answer correctly in 4 attempts out of 5. The second was verbal prompting in matching emotions with words that represent them, and the last prompting was physical - in the last sub-activity, that required the children to physically choose the appropriate facial features, such as eyes and mouth, to create emotions. Similarly, to the other two children, Jack confused the facial features - particularly the eyebrow shape in order to differentiate emotions from each other. In session three, Jack received prompting for the home activity, as he did not do it, therefore the researcher verbally urged him to remember situations where he felt an emotion. In activity 2, he received verbal prompting as well in
one of the sub-activities that required acting a complex emotion, although he was able to recognise and act simple emotions. Then Jack was able to create the required emotions for activity 3 and identify the requested simple and complex emotion in activity 4. In activity 5, Jack needed modelling when acting one emotion due to him not being able to show enough expression on his face, and he needed to be prompted. Another factor for the numerous prompts Jack received in these sessions could be the fact that he was the youngest and would take longer to learn the required skills. Jack was able to answer appropriately in all activities of session four except for one attempt to act an emotion when he needed prompting, as he exaggerated his expressions. In session five, Jack did not need any prompting but he needed two prompts in session six. In these activities Jack was able to answer how a person would feel in the situation given, but he had difficulties imagining other situations that could lead to certain emotions. Similarly Jack needed a verbal prompting in one sub-activity in activity four. Jack did not answer correctly in one sub-activity of activity 3 - that is the feeling game on the computer - due to him rushing to answer. When he was reminded to look carefully at the facial expressions, he was able to answer. In session seven, Jack received verbal prompts in 3 sub-activities of activities 2, 3, and 4 yet he still managed to give appropriate answers in most of the sub-activities. In session (8), Jack gave correct responses in activities 1, 2, 3, 4, and 5 which showed positive improvement in his emotional understanding skills and relating to other people’s feelings, as well as giving appropriate suggestions to support friends when feeling sad. In activity 6, Jack needed verbal prompting to recognise a possible cause of a negative emotion, but managed to give four other appropriate possible causes after prompting.

In session nine, Jack was able to give correct responses in most of the activities but needed verbal prompting when the activity was to give answers on what they would do, if sad or angry. With verbal prompting he was able to think of appropriate responses that did not cause distress to others. Jack was able to give correct responses in all activities of session ten.
Although Jack received several prompts in the intervention programme, he was able to learn the required skills to recognise simple and complex emotions, as well as linking them to social situations. As seen in figure 13, Jack has a rating of 6 in most of the activities and was able to improve by the last session. It was observed that Jack had difficulties at the beginning of the programme to recognise emotions, but with verbal prompting and modelling he was able to learn those skills. This could be seen from activities 1, 2, 3, 4, and 5 of session 7 for example. Despite his younger age in comparison to the other 2 children; and despite the difficulties he had in the first 3 sessions Jack had appropriate observational skills that helped him to learn and practise.

5.4 Conclusion

This chapter evaluated the children’s progress in the experimental intervention. It presented their progress in each session and their level of improvement. It also assesses the progress of the designed intervention and its feasibly to be conducted to children with high-functioning autism. Two forms of evaluation were used; a progress report by the researcher, to give overall picture of the programme and an observation was coded of the children’s responses.
The change in measures used to assess the children’s skills in the experimental group will give a better indication of the efficiency of the intervention programme. If the children score higher at the post-test level, this could mean that the intervention programme helped the children to improve their emotional understanding skills, as well as their social communication skills. The coming section will present thoroughly the pre- and post-test scores for both the experimental and the control group.
Chapter 6 - Experimental programme outcomes

6.1 - Introduction

This section consists of tables and charts of pre- and post-intervention measures for experimental and control children. To examine the data about the social skills, social competence with peers, BarOn Emotional Quotient Inventory (EQI), and the social/emotional checklist, data were entered into SPSS Statistics and total scores were calculated for each questionnaire. Data were split into control and experimental groups, and means and standard deviations were calculated to assess each participant’s responses. For social skills and social competence, scores are calculated for parents, teachers, and pupils whereas the EQI is done by the participants and the check list is by parents.

The results are presented as the following:

- An overall table of scores of individual participants at pre and post level as well as showing the difference between control and experimental group followed by data description.
- Individual presentation of each assessment measure through tables of scores and bar charts illustrations followed by data description.
- Presentation of the correlation in the change of all the measures in relation to each other is presented in Bar charts for both groups.

6.2 - An overall score of individual children at pre- and post-level

Below is a presentation of all the scores of each child at pre and post level as well as the control and experimental group data.
Table 26: Differences in all the assessment measure scores (means and SD) at pre-test and post-test across both the experimental and the control group

<table>
<thead>
<tr>
<th>Variables</th>
<th></th>
<th>Experimental</th>
<th></th>
<th>Control</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Period</td>
<td>Freddie</td>
<td>Oliver</td>
<td>Jack</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Social skills Parents</td>
<td>Pre</td>
<td>22</td>
<td>36</td>
<td>25</td>
<td>27.67</td>
<td>7.37</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>33</td>
<td>39</td>
<td>33</td>
<td>35.00</td>
<td>3.46</td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>+11</td>
<td>+3</td>
<td>+8</td>
<td>+7.33</td>
<td>-3.91</td>
</tr>
<tr>
<td>Social competence parent</td>
<td>Pre</td>
<td>+5</td>
<td>3</td>
<td>4</td>
<td>3.67</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>10</td>
<td>5</td>
<td>6</td>
<td>6.67</td>
<td>2.08</td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>+5</td>
<td>+2</td>
<td>+2</td>
<td>+3.00</td>
<td>+1.50</td>
</tr>
<tr>
<td>Social skills teachers</td>
<td>Pre</td>
<td>23</td>
<td>26</td>
<td>27</td>
<td>25.33</td>
<td>2.08</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>37</td>
<td>36</td>
<td>34</td>
<td>35.67</td>
<td>-1.53</td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>+14</td>
<td>+10</td>
<td>+7</td>
<td>+10.34</td>
<td>0.55</td>
</tr>
<tr>
<td>Social competence teachers</td>
<td>Pre</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>4.33</td>
<td>1.53</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>7.67</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>+4</td>
<td>+5</td>
<td>+1</td>
<td>+3.34</td>
<td>-0.95</td>
</tr>
<tr>
<td>Social skills Pupil</td>
<td>Pre</td>
<td>39</td>
<td>44</td>
<td>42</td>
<td>41.67</td>
<td>2.52</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>42</td>
<td>41</td>
<td>46</td>
<td>43.00</td>
<td>2.65</td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>+3</td>
<td>-3</td>
<td>+4</td>
<td>+1.33</td>
<td>-1.3</td>
</tr>
<tr>
<td>Social competence pupil</td>
<td>Pre</td>
<td>6</td>
<td>8</td>
<td>7</td>
<td>7.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>10</td>
<td>9</td>
<td>11</td>
<td>10.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>+4</td>
<td>+1</td>
<td>+4</td>
<td>+3.00</td>
<td>-3</td>
</tr>
<tr>
<td>EQ Intrapersonal</td>
<td>Pre</td>
<td>111</td>
<td>67</td>
<td>84</td>
<td>87.33</td>
<td>22.19</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>115</td>
<td>79</td>
<td>99</td>
<td>97.67</td>
<td>18.04</td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>+4</td>
<td>+12</td>
<td>+15</td>
<td>+10.34</td>
<td>-4.15</td>
</tr>
<tr>
<td>EQ Interpersonal</td>
<td>Pre</td>
<td>76</td>
<td>81</td>
<td>80</td>
<td>79.00</td>
<td>2.65</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>105</td>
<td>76</td>
<td>94</td>
<td>91.67</td>
<td>14.64</td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>+29</td>
<td>-5</td>
<td>+14</td>
<td>+12.67</td>
<td>+11.99</td>
</tr>
<tr>
<td>EQ Stress management</td>
<td>Pre</td>
<td>93</td>
<td>82</td>
<td>66</td>
<td>80.33</td>
<td>13.58</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>104</td>
<td>93</td>
<td>92</td>
<td>96.33</td>
<td>6.66</td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>+11</td>
<td>+11</td>
<td>+26</td>
<td>+16.00</td>
<td>-6.92</td>
</tr>
<tr>
<td>EQ Adaptability</td>
<td>Pre</td>
<td>73</td>
<td>77</td>
<td>72</td>
<td>74.00</td>
<td>2.65</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>81</td>
<td>89</td>
<td>84</td>
<td>84.76</td>
<td>4.04</td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>+8</td>
<td>+12</td>
<td>+12</td>
<td>+10.76</td>
<td>+1.39</td>
</tr>
<tr>
<td>Total EQ</td>
<td>Pre</td>
<td>85</td>
<td>67</td>
<td>65</td>
<td>72.00</td>
<td>11.02</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>103</td>
<td>79</td>
<td>90</td>
<td>90.67</td>
<td>12.01</td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>+18</td>
<td>+12</td>
<td>+25</td>
<td>+18.67</td>
<td>+0.99</td>
</tr>
<tr>
<td>EQ Positive impression</td>
<td>Pre</td>
<td>98</td>
<td>78</td>
<td>68</td>
<td>81.33</td>
<td>15.28</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>98</td>
<td>73</td>
<td>65</td>
<td>78.67</td>
<td>17.21</td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>0</td>
<td>-5</td>
<td>-3</td>
<td>-2.66</td>
<td>+1.93</td>
</tr>
<tr>
<td>Parent’s Checklist</td>
<td>Pre</td>
<td>30</td>
<td>38</td>
<td>33</td>
<td>33.67</td>
<td>4.04</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>48</td>
<td>44</td>
<td>47</td>
<td>46.33</td>
<td>2.08</td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>+18</td>
<td>+6</td>
<td>+14</td>
<td>+12.66</td>
<td>-1.96</td>
</tr>
</tbody>
</table>
The above is an overall table for all the measures used in the study. The findings compare the pre-test total scores to the post-test total scores for each individual participant. The table also compares the mean and SD of the experimental group to those of the control group. The pattern of mean scores shows a visible increase from pre- to post-intervention for most of the measures for the experimental group but not for the control group. The notable exception is the EQ positive impressions mean score which decreased in the experimental group but remained the same in the control group. A further explanation is given below when each assessment is presented individually. The children with high-functioning autism who took the intervention demonstrated a significant increase in their social skills and social competence with peers. The increase in the Emotional Quotient Inventory agrees with the increase in the social skills and social competence with peers. This pattern of increases for the experimental group across the measures shows a consistent increase; the meaning of this will be discussed in the next chapter.

Another important observation from Table 26 is that there is a significant association between the three variables of parents, teachers and pupils in both the social skills questionnaire and the social competence questionnaire regarding the change in score. When one variable increased at post-test test level, the other two variables also increased. It is noted from the table that there is similarity between the parents mean and the teachers mean in both of Spence’s questionnaires but pupils tended to score themselves higher in social skills and social competence.

6.3 - Individual presentation of assessment measures

6.3.1 - Social skills questionnaire

The first questionnaire examined the social skills of six pupils, as rated by the pupil, the parent, and the teacher. Scores on the social skills questionnaire could range from 0 to 60. The change of social skills between pre intervention and post intervention was examined by calculating the mean and standard deviation of the control and experimental group. Table 27 below outlines the means and standard deviations for the total scores.
The table shows a comparison in the mean and standard deviation between two groups at two test times. At the pre-test time, there is a similarity in the mean score between the control group and the experimental group across the three different variables (parents, teachers and pupils). The Standard deviation shows similarity as well at the pre-test time across the three variables. At post-test time the mean scores differ between the two groups. For the control group the mean of the parent’s social skills scores remains the same, the teachers’ score decreased by 1.66 and the pupils’ score decreased by 2.00. On the other hand, the experimental group shows a positive change in all the social skills mean score. The parents show an increase of 7.33, the teachers 10.34 and the pupils 1.33 which means that parents and teachers gain the much higher than the pupil. Although there is an increase in the pupils score, it was the least in comparison to the other two variables. It should be noted that the children scored the highest in the social skills scores in both groups and at both test levels.

For the control group, only the pupils had scores higher than the scale midpoint of 30 at either test time. For the experimental group, the parents and teachers scored the pupils below the mid-point of 30 at pre-test, but above at post-test. The pupils scored themselves above at both time periods. The consistent increase in the scores across parents, teachers and pupils in the experimental group could indicate the reliability of the gain measures.
Spence’s questionnaire was not standardised but the Spence’s questionnaires model was form in a study of a sample of 376 typical development children and adolescents aged 8 to 17 years who educational schools in Sydney Metropolitan area. The school selected were representative of Australia in general in terms of family income and ethnic background (Spence, 1995). Spence’s study the overall mean total score was 46.11 (SD=9.03, n=187) for parents, the teachers’ mean total score was 52.89 (SD= 9.25, n=313) and the pupils’ mean total score was 47.15 (SD=3.17, n=376) (Spence, 1995). These means of Spence’s study could be considered as a reference point but not as norms for this study. The following comparisons were made between the experimental and control group means with the Spence reference means:

- For the control group, at pre-test, parents’ mean score was 25.00 which is approximately 2 standard deviations below Spence’s mean (M= 46.11, SD=9.03). For the experimental group, at pre-test, parents’ score was 27.6, approximately 2 standard deviations below the mean. Both groups had low social skills prior to the intervention below the population mean for typical development children provided by Spence (1995).

For the control group, at post-test, parents’ score remained at the same mean and SD, but the intervention brought it to 1 SD below Spence’s mean of typical development norms for the experimental group. The experimental group’s post-test mean of 35 shows improvement in social skills.

- For the control group, teachers’ pre-test score of 24 indicates low social skills and is 3 standard deviations below Spence’s mean (M=52.86, SD= 9.25). At post-test, for the control group, teachers’ score of 22.67 is 3.2 standard deviations below Spence’s mean. After the intervention the score became within 1.9 SD. For the experimental group, teachers’ score at pre-test level was 25.33 which is 2.9 standard deviations below Spence’s mean. After the intervention the mean for the experimental group brought the score to 1.9 below Spence’s mean.

- For the control group, the pupils scored themselves 35 which is 1.4 below Spence’s mean (M=47, 67, SD= 3.7). At post-test, pupils in the control groups scored 33 which is approximately 3 standard deviations below Spence’s mean. For the experimental group,
pupils scored 41 which is 0.5 standard deviations below Spence’s mean, then at post-test the pupils’ score was 43, approximately 1.3 standard deviations below Spence’s.

6.3.2 - Spence’s social competence with peers questionnaire

The second questionnaire examined the social competence of six pupils, as rated by the pupil, the parent, and the teacher; this questionnaire was administered at two time periods. Scores on the social competence questionnaire could range from 0 to 18, making 9 the midpoint. Data were also split by control and experimental group and examined.

Table 28: Pre and post intervention means and standard deviations of parent, teacher, and pupil scores on the Social Competence Questionnaire; with means and SD of research sample for the Spence’s Competence Questionnaire

<table>
<thead>
<tr>
<th>Variable</th>
<th>Control Pre-test</th>
<th>Control Post-test</th>
<th>Spence Pre-test</th>
<th>Spence Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Parent</td>
<td>4.67</td>
<td>3.05</td>
<td>3.33</td>
<td>3.21</td>
</tr>
<tr>
<td></td>
<td>3.67</td>
<td>0.58</td>
<td>6.67</td>
<td>2.08</td>
</tr>
<tr>
<td></td>
<td>0.16</td>
<td></td>
<td>3.00</td>
<td>187</td>
</tr>
<tr>
<td>Teacher</td>
<td>6.33</td>
<td>1.53</td>
<td>5.33</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>4.33</td>
<td>1.53</td>
<td>7.67</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>-0.95</td>
<td></td>
<td>3.34</td>
<td>313</td>
</tr>
<tr>
<td></td>
<td>15.60</td>
<td></td>
<td>3.11</td>
<td></td>
</tr>
<tr>
<td>Pupil</td>
<td>8.33</td>
<td>1.53</td>
<td>5.67</td>
<td>2.08</td>
</tr>
<tr>
<td></td>
<td>7.00</td>
<td>1.00</td>
<td>10.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>-0.55</td>
<td></td>
<td>3.00</td>
<td>376</td>
</tr>
<tr>
<td></td>
<td>15.53</td>
<td></td>
<td>3.17</td>
<td></td>
</tr>
</tbody>
</table>

(Mid-point on scale is 9, range is 0-18)

The table shows a compression in mean and standard deviation between two groups at two times tests. At pre-test time, the mean score slightly differs between the two groups, making the control group higher in one to two points, but the difference is simple, which indicates similarity. SD is similar in the two groups for the teachers’ and pupils’ scores but higher for the parents’ score. At the post-test level, there was a significant increase in the mean total score across all variables – parents, teachers and pupils – for the experimental group whereas in the control group the parent, teacher, and pupil scores decreased. The parents’ average score almost doubled, the teachers increased by 3.34 and the pupils by 3.00.
For the control group, no one had scores higher than the mid-point of nine at either time period. For the experimental group, pupils scored themselves higher than the mid-point of nine at post-test.

As Spence’s social competence with peers’ questionnaire was not standardised, it is going to be compared to Spence’s original study with typical development children. The overall mean total score was 14.82 (SD=3, 12, n=187) for parents, teachers’ mean total score was 15.60 (SD= 3.11, n=313) and pupils’ mean total score was 15.53 (SD=3.17, n=376) (Spence, 1995). Both groups in the current study scored lower than Spence’s mean score but the intervention brought the experimental group close to Spence’s by 45% for parents, 49.17% for teachers and 64.40% for pupils. Another interpretation of Spence’s mean and standard deviation is explained below.

- For the control group, at pre-test the parents’ score was 4.64 which is 3.25 standard deviations below the Spence mean (M=14.82, SD= 3.12) and at post-test their score was 3.33 and remains 3.3 S.D.s below Spence’s mean. For the experimental group, at pre-test the parents’ score was 3.67 which are 3 standard deviations below Spence’s mean, then after the intervention it became 2 standard deviations below Spence’s mean. Both the mean scores for both groups indicate low social competence with peers compared to Spence’s mean at pre-test and post-test level.

- For the control group at pre-test level, the teachers’ score was 6.33 which is approximately 3 standard deviations below Spence’s mean (15, SD=3.11), indicating low social skills, then at post-test the score became 5.33 which remains 3 SD below Spence’s mean. For the experimental group, at pre-test level the teacher’s score was 4.33, which is 3 standard deviations below Spence mean, then after the intervention the teachers’ score became 7.67, leading to a standard deviation that comes to 2 SD below Spence’s mean.

- For the control group, at pre-test the pupil’s score was 8.33 which is 2.3 standard deviations below Spence mean (M15.53, SD=3.17), then at post-test the pupils’ score was 5.67 with 3 standard deviations below Spence’s mean. For the experimental group, at pre-test the pupils scored 7, which is 2.6 standard deviations below Spence’s mean, then at post-test the pupils’ score became 10, bringing it to approximately 1.5 standard deviations below Spence’s mean.
The following section outlines the major findings from the study for each source (parents, teachers, and pupils). It compares the pre-test period to the post-test period for each child as well as comparing it across the two groups using bar charts.

6.3.3 - Social skills parents’ questionnaire

The range score of the questionnaire is 0 to 60 and the scale mid-point was calculated as 30 for the results interpretation.

![Bar chart for social skills parents’ questionnaire pre- and post-test with mid-point of 30](image)

The figure above indicates an increase of the social skills in the experimental group at the post-test stage in comparison to the control group. For the experimental group at pre-test, parents’ scores ranged from 22 to 36 then increased at post-test with a range from 33 to 39. For the control group at pre-test, parents’ scores ranged from 17 to 31 and at post-test their scores remained at the same range from 20 to 31. For the experimental group, only Oliver had scores higher than the mid-point of 30 at pre-test, whereas at post-test, all 3 children scored higher than the mid-point of 30. For the control group, Adam scored slightly higher than the mid-point by 1 point at both periods, whereas the other 2 children remained below the mid-point at both times. From the experimental group, Freddie increased
by 11, making him the most improved in social skills, whereas Oliver who already had a high starting point of 36 increased the least.

6.3.4 - Social competence parents' questionnaire

The score range of the questionnaire from 0 to 18 and the scale mid-point was calculated as 9 for research interpretation.

![Social Competence Parents' Questionnaire](image)

**Figure 19: Bar chart for the social competence parents’ questionnaire pre- and post-test with mid-point of 9**

As can be seen from this figure, all children in the experimental group positively increased in their social competence with peers. At pre-test the score ranged from 3 to 5 and at post-test the score ranged from 5 to 10. In the control group, by contrast, the parents’ score ranged from 2 to 8 at pre-test level and then decreased at post-test level to range from 1 to 7. Social competence with peers is the consequence of social skills. Therefore an increase in the social skills questionnaire should correlate with an increase in the social competence questionnaire (Spence, 1995). This result is consistent with the results in figure 1: when social skills increased after the intervention, social competence increased as well. All children scored lower than the midpoint at both test levels, except for Freddie from the experimental group who scored higher.
6.3.5 - Social skills teachers’ questionnaire

The range score of the questionnaire is 0 to 60 and the mid-point was calculated as 30 for the results interpretation.

![Bar chart for social skills teachers’ questionnaire pre- and post-test with mid-point of 30](image)

**Figure 20: Bar chart for social skills teachers’ questionnaire pre- and post-test with mid-point of 30**

The above figure shows that children in the experimental group gained in their social competence as rated by teachers. The pre-test score ranged from 23 to 27 and at post-test level ranged from 34 to 37, reaching higher than the midpoint for all the children. On the other hand, children in the control group remained at the same score or decreased. At pre-test level, their scores ranged from 22 to 26 then after intervention they ranged from 20 to 25. The control group result was below the midpoint of 30 in both periods.

6.3.6 - Social competence teachers’ questionnaire

The score range of the questionnaire was from 0 to 18 and the scale mid-point was calculated as 9 for the research interpretation.
As can be seen from this figure, children from the experimental group demonstrated a significant increase in social competence with peers at post-test level in comparison to pre-test. The score started off ranging from 3 to 6 but after the intervention it ranged from 7 to 8. The children were almost equal in their gain even though Oliver had a low score at the starting point. Again this result is consistent with teachers’ social skills score in figure 3, proving that social competence with peers is the outcome of specific behavioural responses in the children’s social life (Spence, 1995).

By looking at the control group it is noticeable that the score did not improve. The pre-test score ranged from 5 to 8, remained the same for 2 children at post-test and decreased for the third child. Despite the gain in the experimental group, the score remained below the midpoint of the social competence questionnaire.

### 6.3.7 - Social skills pupils’ questionnaire

The range score of the questionnaire is 0 to 60 and the scale mid-point was calculated as 30 for the results interpretation.
The bar chart above represents the scores for the social skills. At pre-test, children scored themselves higher than the midpoint in both groups. The experimental group scores ranged from 39 to 44 and the control group scores ranged from 32 to 37; the control group were lower in their social skills at the pre-test time. At post-test level all the children from the experimental group increased, except for Oliver who dropped by 3 points, Jack and Freddie gained by 3 to 4 points, ranging from 42 to 46. There was no increase in the control group for Daniel, while Chan decreased and Adam gained one score only.

6.3.8 - Social competence pupils’ questionnaire

The score range of the questionnaire is 0 to 18 and the mid-point was calculated as 9 for the research interpretation.
Although this is a self-reporting questionnaire, the children did not score themselves higher than the midpoint except for one child from the control group at both test times. At pre-test, the scores of the children from the experimental group ranged from 6 to 8 and the control group children’s scores ranged from 7 to 10. After the intervention, the experimental group’s score increased from 9 to 11 and the control group’s decreased by 4 to 8 points.

6.3.9 - BarOn EQ-I; YV

The standard scores for the BarOn EQ-I; YV have a mean of 100 and a standard deviation of 15 (Bar-On and Parker, 2000). The standard score ranged from 65 to 130. The manual provided a general guide to interpret the standard scores. These guidelines describe how an individual score compared to those of children and adolescents of the same age range and gender from the normative sample. The interpretive guidelines for the standard scores table are in chapter (four). The guidelines indicate the average range standard score is between 90 to 109 and the greater a score is below 90, the greater the likelihood that the result will indicate a moderate to severe problem or deficiency.
Table 29: Pre and post intervention means and standard deviations of BarOn’s Emotional Inventory by control and experimental groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Control Pre-test</th>
<th>Control Post-test</th>
<th>Experimental Pre-test</th>
<th>Experimental Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Intrapersonal</td>
<td>88.33</td>
<td>16.17</td>
<td>87.33</td>
<td>17.97</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>73.67</td>
<td>8.74</td>
<td>75.33</td>
<td>8.96</td>
</tr>
<tr>
<td>Stress management</td>
<td><strong>92.00</strong></td>
<td>4.58</td>
<td><strong>93.00</strong></td>
<td>6.56</td>
</tr>
<tr>
<td>Adaptability</td>
<td>72.67</td>
<td>6.11</td>
<td>74.00</td>
<td>6.25</td>
</tr>
<tr>
<td>Total EQ</td>
<td>75.00</td>
<td>1.00</td>
<td>76.33</td>
<td>6.03</td>
</tr>
<tr>
<td>Positive impression</td>
<td>79.67</td>
<td>2.89</td>
<td>79.67</td>
<td>2.89</td>
</tr>
</tbody>
</table>

**Bold shows scores above standard score of 90**

The above table summarises the mean and SD for the control group and the experimental group. Each sub-scale was calculated individually and the total score was the sum of intrapersonal, interpersonal, stress management and adaptability but not positive impression (Bar-On and Parker, 2000). At pre-test there are similarities of the score in all the subscales across both groups, except the stress management scale which was higher in the control group. The Bar-On EQi-YV normative base is a sample of 4625 males and 4547 females. The total of 9172 represent community based children and adolescent aged 7 to 18 who are collected from various English-speaking locations in the United States and Canada. The standard score have a mean of 100 and SD= 15.

In this study both groups demonstrate low emotional intelligence that is below the mean of 100. According to the manual (see table 10 chapter 4), average emotional intelligence level is higher than 90, so the stress management score in the control group is considered to almost be at an adequate level. The total EQI at this pre-test level is 1.6 SD below the EQ mean for the control group and 1.8 SD below the EQI for the experimental group. At the post-test level, children from the experimental group scored significantly higher in intrapersonal, interpersonal, stress management and adaptability.
than the control group but positive impression scored one point lower than the control group. One possible explanation to the low positive impression could be the children’s mood during the test as this type of scale is influenced by the status of the person. The Bar-On inventory included a general mood scale in the long version but the current version used the short version due to the children’s age and condition. The mood scale could give an indication of their feelings. The total EQI brought the SD to 0.6 below the mean for the experimental group, whereas the control group remained at 1.6 SD. According to the interpretation guidelines in the Bar-On manual, the children in the experimental group scored higher than the average level in the intrapersonal, interpersonal and stress management scales. Adaptability mean is 84.67 and positive impression mean is 78.67.

Below is a bar chart that shows individual differences across both groups at the two test times.

The total score for the EQ I ranged from 65 to 130 where the average score is 90.

![Total EQ](image)

**Figure 24: Bar chart for total EQ pre- and post-test**

The above figure presents the total score of the EQ subscales excluding the positive impression scale. Children in the experimental group total score ranged from 65 to 85 at pre-test, then increased to 79 to 103, with Freddie and Jack reaching the average score. On the other hand, children from the control
group scored from 74 to 76 and after the intervention there was a small change in the scores of two children ranging from 77 to 82 while one child’s score decreased.

6.3.10 - Social/emotional checklist

The fourth questionnaire was a checklist of the six pupils, as rated by the parent; this questionnaire was administered at two time periods. The checklist was composed of 40 questions with the response options being 0 = rarely, 1 = sometimes, and 2 = usually. Scores on the checklist could range from 0 to 80, and 40 is calculated to be the mid-point. Data were also split by control and experimental group and examined. Means and standard deviations of parents’ scores on the checklist questionnaire are presented.

Table 3: Pre and post intervention Means and Standard Deviations of Parents’ Scores on the Checklist Questionnaire by Control and Experimental Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Control Pre-test</th>
<th>Control Post-test</th>
<th>Experimental Pre-test</th>
<th>Experimental Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Parent</td>
<td>29.67</td>
<td>4.50</td>
<td>31.67</td>
<td>2.52</td>
</tr>
</tbody>
</table>

Mid-point on scale is 40 and range is 0-80

The above table summarises the mean and SD for both groups. At pre-test level the scores vary between the control group and experimental group by 4 points only, which could indicate a small level of similarity. Both groups were 4 SD below the mean. At post-test the mean significantly increased in the experimental group in comparison to the control group. The experimental groups increased by 12.66 points while the control group increased by 2 points. At the post-test stage, both groups were 2 SD below the mean.

The range of the checklist is from 0 to 80 and the midpoint was calculated as 40 for interpretations.
The above figure presents the total score of the social/emotional checklist for each child.

The change in score over the two time periods made a noticeable difference across the experimental group and the control group. The experimental group score’s from 30 to 30 at the pre-test level. After the intervention, the score went up, ranging from 44 to 48. All the children in this group exceeded the mid-point point of 40. On the other hand, children from the control group ranged from 25 to 34 at pre-test, then two children’s slightly increased by 4 points and one child’s score remained the same, with all ranging from 29 to 34. No one from the control group reached the mid-point level.

To show the correlation in the change of all the measures in relation to each other, a bar chart is presented with all the variable measures for both groups. The different scores between pre-test and post-test are calculated and presented for each measure.

Figure 25: Bar chart for the social competence pupil’s questionnaire pre- and post-test with mid-point of 40

Parents' Checklist

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freddie</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Oliver</td>
<td>40</td>
<td>44</td>
</tr>
<tr>
<td>Jack</td>
<td>40</td>
<td>48</td>
</tr>
<tr>
<td>Daniel</td>
<td>40</td>
<td>44</td>
</tr>
<tr>
<td>Chan</td>
<td>40</td>
<td>44</td>
</tr>
<tr>
<td>Adam</td>
<td>40</td>
<td>44</td>
</tr>
</tbody>
</table>

0 10 20 30 40 50 60
6.4 - Change of scores in all the variables

Figure 26: Bar chart for score differences of all the measures

The figure above presents the change in measures for all the children participating in the study. It is clear that there is a consistent gain in the score for the children in the experimental group in comparison to the children in control group. When looking at the social skills and social competence, it becomes noticeable that when the social skills score increases, social competence with peers rises as well. Another observation is that teachers scored the children the highest in comparison to parents and children. Although there was a slight increase in score for a few children from the control group, e.g. Chan scored 4 points higher at post-test, the increase in the experimental group is noticeably higher.
6.5 - Change of score in the experimental group

This figure shows the individual change in the experimental group for all the measures. A general look indicates that the children showed improvement in the majority of the variables. For parents’ social skills all children improved, for teachers’ social skills all children improved, and for pupils’ social skills all children except Oliver improved. In terms of social competence, children improved in the parents, teachers and pupil’s measure. For the EQi: YV, all children improved in the intrapersonal scale, all children but Oliver improved in the interpersonal scale, all improved in the stress management scale and all improved in the adaptability scale. The figure shows clearly the decrease in the positive impression. An explanation for those scores is presented in table 4. It should be noted that for this reason the positive impression score was not included in the EQ total score. The figure also shows that there was an increase across all the children in the experimental group in their social/emotional checklist.
6.6 - Change of score in the control group

The figure above shows the decrease of score in the control group over two periods of time, pre- and post-test. For parents’ social skills two children decreased and one child increased by three points, teachers’ social skills did not show an increase and nor did pupils’ social skills, parents’ social competence, teachers’ social competence or pupils’ social competence. On the contrary, those measures mostly showed decreases. For the EQi: YV, the change varied between decreases for some children, remained the same for some and slight increase for other children across the six sub-scales. The checklist shows a slight increase for two children’s scores and one’s remained the same.

Figure 28: Change of score in control group
6.7 - Conclusions

Analysing the data in all 13 variables demonstrates a visible increase in the total score in favour of the experimental group. Children who experienced the intervention showed enhancement in their social skills as well as their social competence with peers. The EQi: YV scores show a clear increase in intrapersonal, interpersonal, stress management and adaptability skills. There was a clear decrease in the positive impression score. The last measure analysed in this chapter is the social/emotional checklist that presents a visible improvements in the children’s social- emotional understanding skills from the experimental group.
Chapter 7 - Case study analysis

7.1 - Introduction

The literature reviewed in the methodology chapter suggests that, with a limited number of cases, it is best to conduct a qualitative method to get deep details and a thorough explanation of the phenomenon (Silverman, 2010; Cohen et al, 2006). As previously stated, two cases were chosen for case study and data were collected from various resources: parents, teachers and the children themselves. Analysis of the qualitative data involved comparing and contrasting the two cases examined. Cross-case analysis was carried out to identify the similarities and differences between the cases. Then, a thematic analysis was conducted to combine the interview texts of all three sources with the child's assessment report. All themes were taken from the areas covered by the interview. Parents’ and teachers’ interviews were similar but the children were given simpler questions. The data are analysed in three parts: the first section presents tables of parent interviews across the two cases followed by teacher interviews then the children; the second section contains tables of the follow-up interviews; the last part contains tables that combine the qualitative data with the quantitative data to assess change over time, similarities and difference between the two cases and consistency between the three sources.

7.2 - Data recording

The study followed voice recording the interviews as the most reliable approach. Then interviews were transcribed word for word in texts. Details of the emotional status of the interviewee such as raising their voice, stopping, thinking or posing, were not recorded. Transcripts are presented in appendix 17.

7.3 - Case analysis in qualitative data in tables
The cross-case analysis below was for each item investigated in the interview. Interviews were conducted on the mothers and teachers of children with autism, as well as the two children themselves. All participants were asked a series of questions pertaining to the child with HFA. The interviews were conducted and analyzed to assess differences and similarities between the two children. In addition to the interviews that were conducted, their previous mental health assessments were analysed. Interview responses were compared on a per-question basis. As detailed in the methodology chapter, mothers were asked a series of questions pertaining to developmental and medical history, family life, diagnosis, descriptions, causes, social emotional interaction, impact intervention, and services to support child and family. Teachers were asked questions about perception, causes, diagnosis, impact in social/emotional life, and intervention. The children were asked questions about home life, school life, the intervention, and their strengths and weaknesses in emotional/social understanding. Interviews were conducted prior to and after the intervention.

Unitising and categorizing techniques were used for this type of analysis. Prior to beginning the analysis, all of the interviews were read through thoroughly, so that the researcher could gain a detailed understanding of the data. General concepts were mentally gathered to form an idea of the overall tone and content of the interviews. To further analyze the data, interviews were assessed on a per-question basis. Each participant’s response to question one was summarized, rewritten and organized so that both responses immediately follow the question at hand. All interview summaries are in the appendix (see appendix 20). The same format was repeated for all interview questions. Organizing the data in this manner allowed the researcher to better comprehend the similarities and differences presented in each of the responses. Then, the most important step was conducted - creating categories, or as some researchers call them, themes. For each question, responses were placed into categories, then the most relevant data to the category chosen were highlighted.

The themes that were created are listed follows.

In parents’ interviews:
1. Themes for the developmental and medical history area were birth order and siblings, development in physical, social, emotional, language, and cognitive development, concerns about child’s development and behaviour and medical condition.

2. In the family life area, themes were: family members living with the child, other children with similar difficulties, child’s favourite activities, hobbies, school subjects, parenting style, ways of praising and punishment, whether parents would do anything different, level of education and career.

3. The themes in the diagnosis area were: child’s diagnosis, time and involvement, understanding of special needs and feelings about it, shared diagnosis information with others, child’s awareness of his special needs, child’s strengths in his behaviour and ability of learning, concerns about child’s schooling and his future.

4. Themes for the child's descriptions area are: child’s daily routine and the level of attachment to routine, relationship with parents and siblings, child’s social communications with others, child’s social skills strengths and difficulties, and other factors that increase or decrease the child’s difficulties.

5. Themes for causes are: cause of the difficulties, and suggestions to prevent difficulties.

6. Themes for social emotional interaction were: show emotions, facial expressions, ability to understand family peers feelings, reaction to other people’s negative emotions, starting conversation with you or with other adults, things which frighten, interpreting other people’s behaviour, relationships with friends, number of friends, seek to make friends, ability to attempt communications and maintain it, and reactions to other people’s remarks.

7. Themes in the impact area were: impact of the child’s social delay at home and at school, mother’s feelings towards this, child’s feelings about himself, link between child’s
relationships with others and social and emotional difficulties, bullying experience, feelings about bullying, and strategies to solve his problems.

8. Themes for intervention were: opportunities mother has to express her concerns about the child and support, support resources, the most useful strategies used to overcome his difficulties, type of intervention that has helped the child to improve social skills.

9. Themes for services to support child and family: which school, how long, support offered to your child at school, level of SEN at school, level of support for your child, what is offered (if not, why not?), contact with mental health services, and satisfaction with this level of service.

In teachers’ interviews:

1. Themes for perception area: the child’s academic performance, other children with the same difficulties in class, IEP, specific targets and progress, time of concerns arising, child’s strengths in behaviour and approach to learning, and concerns about the child’s understanding of social skills.

2. Themes for diagnosis: diagnosis, feeling about the diagnosis, request to be diagnosed, understanding that the child has special needs.

3. Themes for the impact in social and emotional life were: the child’s social interaction with you and his peers, level of understanding, relationships affected by these difficulties, ability to express and understand feelings, other children’s response to this behaviour, child’s behaviour affecting your teaching and teaching plans, and child’s behaviour affecting other children’s learning.

4. Themes for intervention were: opportunities teacher has to express concerns about the child and support, social skills training, who gives support and how, teacher assistant (if applicable), and other strategies which could be used.

In children’s interviews:
1. The themes for home life were: activities in free time at home, play with whom, relationship with family members, ways of expressing feelings to family, and ability to read family member’s emotions and responses.

2. Themes for school life and intervention area were: activities at play time in school, number of friends and how they met, how to start a conversation, letting friends know how you feel, what friends feel about it, favourite subjects, other children to play with them, and support in school.

3. Themes for strengths and weaknesses in social/emotional understanding were: recognizing if someone close feels unhappy or hurt, response to them, things that make the child sad, things that make the child angry, dealing with sad and anger, ways of cheering yourself up, things make him happy, how to deal with problems, and response to someone you don’t like wanting to play with you.

Follow up interviews to parents, teachers and children were treated the same way. Below are the themes established from the interviews:

1. Themes for parents’ follow-up interviews were: observation on the child’s general social interaction with others since completing the sessions, social interaction with his current friends, child’s effort in maintaining his friendship (e.g., initiating interaction and conversation with friends), gaining new relationships, the child’s ability to recognise parents’ feelings and the feelings of others, impact of intervention programme on child’s life.

2. Themes for teachers’ follow-up interviews: interaction with children in playground and in class, coping with group work tasks, using new social skills to overcome his delay, ability to express feelings, and understanding the emotions of others (including of the teacher).

3. Themes for children’s follow-up interviews: things learned from the sessions, how learning about different emotions helped you with friends, if your friend feels sad, angry, depressed
what do you do, using skills learned with family, techniques to express your feelings when angry, favourite activities and relationship with your friends and teacher at school.

Both children had been previously assessed and their assessment was analysed in the same way. Themes for assessment were as follows: presenting issues and referral, assessment tools used, formulation, diagnosis and recommendations.

After completing this step, tables were created for each interview area to track the differences and similarities among the responses presented (see tables below). Responses from Freddie’s mother were aligned with responses from Oliver’s mother, responses from Freddie’s teacher were aligned with response from Oliver’s teacher, and responses from Freddie were aligned with response from Oliver. For each interview question that was asked, the responses from both participants were assessed to determine what information was common and uncommon among both participants. Responses to the interview questions were again read through in their entirety before any data was entered into the table. Responses that were common between both participants were entered into a column labelled ‘agreement’. Responses that reflected behaviours of only one of the children were entered into a column labelled with the corresponding child’s name. For example, if both children were the eldest, that information was entered into the agreement column, while the column titled Oliver indicated one sister and the column titled Freddie indicated two sisters. Examining data in this manner allowed the researcher to extract not only themes, but also differences between the children’s behaviours.

**Presentation of data**

First, the source interviews (parent, teacher, child) are given, then each area is presented along with a summary of the questions. Summaries of the source interviews are presented in appendix 20. In part 7.3.1, below, are the tables that represent each area with the key themes and summary of similarities and difference. Below each table is the analysis of the data.

**7.3.1 - Parents’ Interviews**
The parents’ interviews took place at the parents’ home. The parents’ interviews were broken down into nine sections and are formatted as such. The sections are: developmental and medical history, family life, diagnosis, descriptions, caused, social-emotional interaction, impact, intervention, and services to support child and family. Developmental and medical history is covered with six questions. Family life is covered with six questions, diagnosis is covered with nine questions, descriptions is covered with six questions, causes is covered with two questions, social-emotional interaction is covered with 12 questions, impact is covered with seven questions, intervention is covered with four questions, and services to support child and family is covered with eight questions.

7.3.1.1 - Developmental and Medical History.

The questions were:

- What is his/her birth order?
- What were the developmental milestones from 0-3 years, 3-5 years, and 5-to date? (prompt questions will focus on physical, social and emotional, language, and cognitive development)
- What concerns did you have about your child’s development and behaviour?
- Does the child suffering from any medical condition?
- Has s/he had any life event that left negative impact on the child?
- How was the transition to enter school? Prompting question (Separation experience)
Table 3: Themes for Parents’ Developmental and Medical History

<table>
<thead>
<tr>
<th>Areas</th>
<th>Oliver</th>
<th>Freddie</th>
<th>Similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difference</td>
<td>One sister</td>
<td>Two sisters</td>
<td>First-born</td>
</tr>
<tr>
<td>Birth order and siblings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development on physical, social, emotional, language, and cognitive development</td>
<td></td>
<td></td>
<td>Development milestones were normal</td>
</tr>
<tr>
<td>Concerns about child’s development and behaviour</td>
<td>Does not know boundaries</td>
<td>Problems with his temper</td>
<td></td>
</tr>
<tr>
<td>Medical condition</td>
<td>Eczema, allergies</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Life event that left negative impact on the child</td>
<td></td>
<td></td>
<td>Nothing was indicated</td>
</tr>
<tr>
<td>Transition to enter school, separation experience</td>
<td>Originally he had separation anxiety but adjusted in time for school</td>
<td>Transition into school was fine</td>
<td></td>
</tr>
</tbody>
</table>

The table above summarizes the developmental history to show milestones, development and concerns from parents toward any delay. As reviewed in the research, the HFA subgroup in autism is normally diagnosed at a later stage, researchers are investigating early signs in development for early diagnosis (Volkmar et al, 2005; APA, 2000). Freddie and Oliver are both first-born children and have other siblings. Freddie has two younger sisters and all of his developmental milestones were normal, while Oliver has only one sister (26 months younger than him) and his language was slightly delayed. They both started nursery very young and were learning at a normal level, but Oliver’s mother noticed some problems in the playground - for example, that people were intentionally bumping him or hurting him and he was teasing others inappropriately without stopping. In the category “concerns about child’s development and behaviour”, both children presented some early signs of autism, at age
four for Freddie and age three for Oliver. The signs were as follows: Freddie did not sit with all the children in school; he would begin wandering around, going to the corner and reading books. Once he was diagnosed, mother realized that in hindsight he would do things such as get very angry and bang his head against the car seat or become very tense as he cried. As mentioned for Oliver, above, he did experience difficulties playing with others; his mother reported that he does not sit with others, does not work in groups, and exhibits odd interaction behaviour. These early signs are clear indications of autism symptoms but were mostly obvious with Oliver. In the medical conditions theme, Oliver has a severe allergy to certain types of food, which, in both my opinion and his mother’s, could amplify the social interaction problems. His mother stated ‘he fears sitting next to people who are eating food that he is allergic to’. Freddie did not have other medical conditions.

The “transition to school” category presented different perspectives. While Freddie managed the separation, and adapted to school life, Oliver would ‘cry until he vomited and they would have to come get her’, as his mother stated. Once Oliver turned three they gradually increased the playgroup to three days a week so it came time for school the increase from three to five days, he did not have a problem with it.

7.3.1.2 - *Family Life*

The questions were:

- Who lives in the house (relatives and their age)?
- Are there any other children with similar difficulties?
- What are your child’s favourite activities, hobbies, school subjects?
- Describe your parenting style .Prompting question (ways of praising and punishment)
- Would you do anything different and why?
- What is your level of education and career?
### Table 32: Themes for Parents’ Family Life

<table>
<thead>
<tr>
<th>Areas:</th>
<th>Freddie</th>
<th>Oliver</th>
<th>Similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family members lives</td>
<td>Two sisters</td>
<td>One sister</td>
<td>Mother and father</td>
</tr>
<tr>
<td>with the child</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other children</td>
<td>Two sisters</td>
<td>One sister</td>
<td>No</td>
</tr>
<tr>
<td>with similar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>difficulties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child’s favourite</td>
<td>History</td>
<td>Reading and computer</td>
<td></td>
</tr>
<tr>
<td>activities, hobbies,</td>
<td></td>
<td>games</td>
<td></td>
</tr>
<tr>
<td>school subjects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parenting style, ways</td>
<td>Relaxed and small steps teaching</td>
<td>Punishing and talking</td>
<td>Praising</td>
</tr>
<tr>
<td>of praising and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>punishment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parents would do</td>
<td></td>
<td>Overreact less</td>
<td></td>
</tr>
<tr>
<td>anything different</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of education and</td>
<td>Mother is part time computer programmer, father is journalist</td>
<td>Father works as accountant, mother is child-minder</td>
<td>Both parents university level and working</td>
</tr>
<tr>
<td>career</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The table above shows that family life is normal for both children, as they both live with a working father, and a mother with a part-time job. Neither of the families has other family members, similar to the two cases. Under the child’s favourite activities and hobbies, both children share an interest in reading and computer games. They are obsessed with reading to the point that they spend all their play time reading by themselves. Again, this description fits the diagnostic criteria of autism by repeated patterns of behaviour (ASA, 2011; Wing, 1981). It is also described in the literature that, by doing a solo activity, children avoid social interaction because they do not have the skills that help them to interact (Attwood, 1998). Children also find it easier to interact with objects, hence children here spend longer hours with computer.

Both sets of parents share praising as a way of encouraging their children to positive behaviour, but Oliver does not enjoy it. Freddie’s mother is relaxed and uses charts and stickers to praise him, while Oliver’s mother talks to him before issuing a punishment to help her understand him; this helps Oliver
to understand what acceptable behaviour is as he tries to push boundaries. When asked if the parents would do anything different, Freddie’s mother did not add anything, though Oliver’s mother felt that she needs longer time to think of the appropriate response to her son’s negative behaviour.

7.3.1.3 - Diagnosis

The questions were:

- What is your child’s diagnosis? When? Who was involved?
- Do you understand that your child has special needs? What are these special needs? How do you feel about them?
- Did you share information about your child’s special needs with other family member or friends?
- Is the child aware of his/her difference and special needs?
- What are your child’s strengths in his/her behaviour and ability of learning?
- What concerns do you have about your child’s schooling and his/her future?
Table 33: Themes for Parents’ Diagnosis

<table>
<thead>
<tr>
<th>Areas:</th>
<th>Freddie</th>
<th>Oliver</th>
<th>Similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child’s diagnosis, time and involvement</td>
<td>Atypical autism PDD, at age of 10, mother and teacher</td>
<td>Aspergers syndrome, at age of 6, teacher noticed first</td>
<td>Autism, teacher noticed</td>
</tr>
<tr>
<td>Understanding of special needs and feelings about it</td>
<td>Hurt her feelings a lot to know that her first child would suffer for a very long time</td>
<td>Understand the type of difficulties, read about it, felt devastated about the diagnosis news</td>
<td></td>
</tr>
<tr>
<td>Shared diagnosis information with others</td>
<td>No</td>
<td>Friends and family</td>
<td></td>
</tr>
<tr>
<td>Child’s awareness of his special needs</td>
<td>Refused to see himself as different</td>
<td>Yes, but he did not know what it was</td>
<td></td>
</tr>
<tr>
<td>Child’s strengths in his behaviour and ability of learning, concerns about child’s schooling and his future</td>
<td>Not knowing the right high school</td>
<td>Very intelligent, high academic skills, fast reader, socially delay, concerns about moving to high school.</td>
<td></td>
</tr>
</tbody>
</table>

The table above describes similarities and differences in the children’s diagnosis. Both children share a similar diagnosis of high-functioning autism, and this was most noticed by the teacher who referred them to the NHS mental health for full diagnosis. Both mothers had similar feelings when they received the news and were devastated. The diagnoses differ in the subcategory: whereas it is atypical autism PDD-NOS for Freddie by the age of 10, it is Asperger’s Syndrome for Oliver by the age of 6.

Another difference appears in the theme of ‘shared diagnosis information with others’ - the number of people knowing the diagnosis is different. Oliver’s mother did not mind informing family and close friends, whereas Freddie's mother and father are the only people to know. The difference in diagnosis
was in picking up signs of autism. Freddie was diagnosed at a later age in comparison to Oliver, and even when the teacher pointed out his behaviour, the mother took some time to notice the difference between him and his peers.

In the theme of ‘child’s awareness of his special needs’, the parents’ responses were different. Freddie’s mother did, in fact, inform her son and explained the diagnosis, but he did not accept it and refuses to see himself as a child with special needs. On the other hand, Oliver’s mother did explain his needs without labelling and he knows that he has special needs. After two years, Oliver noticed his condition clearly after a bullying incident in school. Freddie and Oliver are similar in their strengths both in behaviour and in the ability of learning at school. As the mothers state, both are very intelligent, have high academic skills, are fast readers, but have social delays. The mothers also share concerns regarding the children’s moving to high school; Oliver’s mother is worried about choosing the right school for her son, whereas Freddie’s mother’s concerns are regarding exams and the pressure to socialise.

7.3.1.4 - Descriptions

The questions were:

- Describe your child’s daily routine and the level of attachment to routine
- Describe the child’s relationship with you, father (if applicable) and siblings (if applicable)
- Describe your child’s social communications with others
- Describe your child’s social skills strengths and difficulties
- In your opinion, are there any factors that increase or decrease the child’s difficulties? Explain
Table 34: Themes for Parents’ Descriptions

<table>
<thead>
<tr>
<th>Areas:</th>
<th>Freddie</th>
<th>Oliver</th>
<th>Similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child’s daily routine and the level of attachment to routine?</td>
<td>Normal routine</td>
<td>Does not like change</td>
<td>Does not like change/ need warning</td>
</tr>
<tr>
<td>Relationship with parents and siblings</td>
<td>Good with parents and sisters</td>
<td>Good with sister but argue sometimes, similar personality as parent; so they clash</td>
<td></td>
</tr>
<tr>
<td>Child’s social communications with others</td>
<td>Does not want to play with people in school, rejected from others</td>
<td>Uncomfortable in groups and prefer to be alone</td>
<td></td>
</tr>
<tr>
<td>Child’s social skills strengths and difficulties</td>
<td>Is polite and funny character, difficulties initiating others, is a loner, bullying from school mates</td>
<td>Does not like unfamiliar territory, does not compromise, is polite and will initiate a conversation, wants to be with others</td>
<td>Polite</td>
</tr>
<tr>
<td>Other factors that increase or decrease the child’s difficulties</td>
<td>Stress, separating school from home restrict having school friends at home.</td>
<td>His lack of understanding emotions</td>
<td></td>
</tr>
</tbody>
</table>

This table describes some main features of HFA and AS in the two cases. Freddie’s mother said that he has a normal daily routine, but that he reacts negatively when changes happen. Similarly, Oliver is uncomfortable with changes of routine. Both parents uses the same strategies, warning their children in advance if a change of routine will occur. Freddie’s mother made him a schedule to follow and provides him with potential changes. Both children have a good relationship with their parents and sisters, but argue often when playing with their siblings. Although Oliver plays with his sister as he needs the company, according to his mother, his sister does not continue playing when he does not compromise and follow her ideas. When describing their communication with others, they are both
seen to show classic autistic social interaction difficulties and peculiar relationships with peers, yet each child presents these difficulties in a different way. Freddie’s approach to interacting with others is a result of his mother’s arrangement, as he prefers to be alone playing computer games. He will interact and approach to play, but becomes a target of teasing as he gets frustrated easily. His way of dealing with this difficulty - as explained in the next theme - is to stay by himself reading a book in school. Oliver, on the other hand, does not like interaction with friends as he does not know how to act. In addition, he does not enjoy going to others’ houses, as he feels it’s out of his comfort zone. Both children share politeness as a strength, but also share the fact that their relationship with others is affected by difficulties. Again, these strengths and difficulties are represented differently by each child, as usual among children in the spectrum. For example, Freddie is a polite and funny character - he uses this quality to make his classmates laugh, but he has difficulties initiating conversations with others. These difficulties impact on him, causing feelings of loneliness, and he becomes a target of bullying from schoolmates. Oliver, on the other hand, is more willing to interact and does initiate a conversation with his peers, but he does not compromise and does not know the boundaries. This leads him to being withdrawn from other children in school. Parents were given questions to clarify their opinion on factors that increase or decrease social difficulties, and both gave different answers. Freddie’s mother stated a typical characteristic of autism that was described in the executive function in the literature review. Her son, as she stated, ‘systemizes his interaction with friends, the people he meets at school he should only see at school therefore, systemizing and putting his friendship in order makes it hard to do any other activity with them other than computer games’. She believes that not accepting change isolated him. Oliver’s mother, on the other hand, describes his difficulties in terms of his emotions having an impact on his relationship with friends. For example, when he is able to see someone’s emotions, he does not know what to do. He may just stand there and stare.

7.3.1.5 - Causes

The questions were:
Table 35: Themes for Parents’ Causes

<table>
<thead>
<tr>
<th>Area:</th>
<th>Difference</th>
<th>Similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cause of the difficulties</td>
<td>Lack of interest in others, late diagnosis</td>
<td>Lack of structure</td>
</tr>
<tr>
<td>Suggestions to prevent difficulties</td>
<td>If the autism had been caught at an earlier age, more support in school</td>
<td>Provide buddy system</td>
</tr>
</tbody>
</table>

From the above table, we can see that Freddie’s mother describes the cause of difficulties as the lack of interest in others. Not being motivated to initiate interaction is described in the diagnostic criteria of autism and high-functioning autism under social behaviour (Attwood, 1998; Wing, 1981). She also believes that the late diagnosis had a great impact on his life. Oliver’s mother describes a different cause of his difficulties: the lack of structure and organised group work in school. Both parents share the perspective that lack of intervention in school is a factor that increased their difficulties. Oliver’s mother added that, when her son receives structured lessons or interaction with others, he is happier, therefore she suggested that his school should provide a buddy system for him, if possible. Freddie’s mother again emphasises the late diagnosis, and that if he was picked up at an early age, he would receive more support in school.
7.3.1.6 - Social-Emotional Interaction

The questions were:

- Does your child express her/his feelings (prompting question does s/he show you when angry?
- Describe the child’s ability to understand your feelings and the feelings of peers
- Describe the child’s reaction to other people’ negative emotions such as sad or angry
- How does your child start a conversation with you or with other adults?
- Is s/he frightened from specific objects? What are they? What is his/her reaction
- How does the child interpret others people behaviour?
- Describe his/her relationship with his friends - prompting (is it rapport, one side attention)
- How many friends does your child have?
- What is your role in sustaining his friendship?
- Does your child seek to make friends?
- How easy does your child finds it to attempt communications or maintain?
- How does your child react to other people remarks on him/her?

Table 36: Themes for Parents’ Social-Emotional Interaction

<table>
<thead>
<tr>
<th>Areas:</th>
<th>Freddie</th>
<th>Oliver</th>
<th>Similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expressing emotions</td>
<td>Lack of facial expressions</td>
<td>Only big emotions</td>
<td>Exaggerate distress, extreme emotions</td>
</tr>
<tr>
<td>Understanding family and peers emotions</td>
<td>Only if close family are upset Does not understand peers emotions</td>
<td>Maybe read them if they are exaggerated</td>
<td>Cannot read them</td>
</tr>
<tr>
<td>Responding to other people’ negative emotions such as sad or angry</td>
<td>Will be very kind and sympathized</td>
<td>He does not understand and will not sympathize</td>
<td></td>
</tr>
<tr>
<td>Starting conversation</td>
<td></td>
<td></td>
<td>Starts conversations</td>
</tr>
</tbody>
</table>
with you or with other adults  with his mother, does not speak with others
Things frightened him  The dark and spiders  Nothing
Interpreting other people’s behaviour  Does not fully understand
Describe of relationship with his friends  Friendships are one sided, repetitive activities  Wants to be social and have his friends visit, knows how to carry a conversation  None reciprocal relation, one sided
Number of friends  One  Several
Does your child seek to make friends  No  Yes
Ability to attempt communications and maintain it  He does not  Asks to spend time with friends  Lose reciprocal communication and maintaining
Reaction to other people remarks  Upsets him  Does not want to be told

It is clear from the length of this table that questions were devised to explore all aspects of emotional understanding and social interaction in both children in the scope of autism. There were similarities between the cases in expressing emotions - they both have limited facial expression and are limited to simple emotions, happy, sad and angry. They will though have degrees of anger. They are also similar in exaggerating their expressions, e.g., Freddie shows anger by shouting and kicking, whereas Oliver does not gradually change, he is one extreme or the other. Both children show difficulties in recognising other people’s emotions but Freddie’s mother added that he is able to read her feelings. In the same area, another issue was analysed and categorised - namely, their ability to recognise other people’s negative emotions such as sad or hurt. They both give what is expected from children with autism: difficulties to recognise other people’s feelings. But, somewhat surprisingly, Freddie does sympathise and respond appropriately when a family member is sad or when he is able to recognise feelings of friends or relatives. On the contrary, Oliver does not have the ability to read others’
emotions and when he recognises them, he is still not able to empathise. A quote from Oliver’s
mother explained this issue further: “He may understand that if you bump into something you hurt
yourself, but he does not know well enough to go and give a hug. It is clear that he understands but he
does not know the appropriate response”. She added that he finds it challenging to understand body
language and he prefers not to look at people when talking to them, as their body language confuses his
understanding.

Mothers were asked about their children’s ability to start a conversation and - as presented in the table-
the responses are similar. They both experience difficulties initiating a conversation with others, but
are comfortable and able to do so with mothers. The level of their difficulties varies though; while
Freddie almost never starts a conversation with others, Oliver would interact with adults but in an
erratic manner. In addition, they both have difficulties fully interpreting others’ behaviour. Oliver’s
mother also added that if he was initiated by others, he would respond politely, but quickly end the
conversation and go back to reading or playing computer games. In terms of their relationship with
friends and their efforts to maintain friendship, both mothers state that it is always a non-reciprocal
relationship. Freddie does not seek interaction and his one-sided conversation limits his number of
friends to one. Oliver’s mother on the other hand said that he does have friends and wants to have
friends to visit, however he does not understand how to look for cues to stop a conversation, for
example, signs when others lose interest. Another negative aspect that might have an impact on their
interaction with friends is that they both react extremely upset to others’ comments or remarks about
their behaviour.

7.3.1.7 - Impact

The questions were:

- Describe the impact of your child’s social delay at home and at school
- How does this make you feel?
- How does your child feel about himself?
• Do you think that your child’s relationships with others are affected by his/her social and emotional difficulties? How?
• Has your child experience any bullying? How?
• How does s/he feel about it? How does s/he deal with bullies?
• What are his/her strategies to solve his/her problems? E.g. when feeling sad or angry.
<table>
<thead>
<tr>
<th>Areas:</th>
<th>Freddie</th>
<th>Oliver</th>
<th>Similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact of the child’s social delay at home and at school</td>
<td>Is not learning social skills, is a loner, familial relationship, little interaction time with family</td>
<td>Does not know how to respond to others’ emotions, gradually withdrawn, not as such an issue at home</td>
<td>Worried about problems at school</td>
</tr>
<tr>
<td>Mother’s feelings towards this</td>
<td>Worried, sad, trapped and sad that she can’t help</td>
<td>Devastated</td>
<td></td>
</tr>
<tr>
<td>Child’s feelings about himself</td>
<td>Does not recognise his differences</td>
<td>Angry</td>
<td></td>
</tr>
<tr>
<td>Link between child’s relationships with others and social and emotional difficulties</td>
<td>In the future it may cause depression and anxiety</td>
<td>He does not know how to respond to others</td>
<td>Yes</td>
</tr>
<tr>
<td>Bullying experience</td>
<td>Not accepted by others, they make fun of</td>
<td>Extreme bullying, physical and verbal abuse</td>
<td>Yes</td>
</tr>
<tr>
<td>Feeling about bullying</td>
<td>He wants to know what he can do to make it stop</td>
<td>Knows how to remove himself from the situation</td>
<td></td>
</tr>
<tr>
<td>Strategies to solve his problems</td>
<td>No strategies</td>
<td>He knows he can ask for help or go to a safe place</td>
<td></td>
</tr>
</tbody>
</table>

This table presents the impact of emotional and social delays. Both parents make it explicit that it does affect their children’s relationships with others, but that the impact varies from one child to another. Freddie’s mother explained that by not interacting with others, he does not develop social skills and will be a greater problem when he is teenager. He is a loner, and preferring to be by himself...
has affected relationships with his family as he spends limited interaction time with them. Oliver’s mother also described the impact thus: not knowing how to respond to others’ emotions may hinder his ability to communicate which leads to him becoming gradually more withdrawn. The other difference is that interaction is not as big of a deal at home since they learned to understand him better. When it came to the mothers’ feelings towards their children’s problems, as expected from any parents of children with special needs, they were devastated, sad and worried about problems at school. The children’s feelings about their own needs were different. Whereas Freddie refuses to see himself as a child with special needs, Oliver does realise that but gets angry. Oliver is dealing with his anger and undergoing anger management to help him cope - especially with bullying. As the theme regarding bullying at school stated, they both are targets of bullying. The next theme explains the children’s way of dealing with bullying and their different approaches: where Freddie does not know how to react and stop them from hurting his feelings, Oliver learned how to remove himself from such situations.

7.3.1.8 - Intervention

The questions were:

- What opportunities do you have to express your concerns about the child and seek support?
- Who gives you support and how?
- What are the most useful strategies used to overcome his/her difficulties?
- Is there any type of intervention that has helped your child to improve social skills? If yes, explain in what way it helped?
Table 38: Themes for Parents’ Intervention

<table>
<thead>
<tr>
<th>Areas</th>
<th>Freddie</th>
<th>Oliver</th>
<th>Similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunities mother have to express her concerns about the child and support</td>
<td>Not enough school intervention</td>
<td>The school changed bullying policies because of her concerns</td>
<td></td>
</tr>
<tr>
<td>Support resources</td>
<td>His teacher and her husband</td>
<td>Books and herself</td>
<td></td>
</tr>
<tr>
<td>The most useful strategies used to overcome his difficulties</td>
<td>Be specific with him</td>
<td>Continue to understand him and define boundaries</td>
<td>Clear Instructions</td>
</tr>
<tr>
<td>Type of intervention that has helped the child to improve social skills</td>
<td>Structured programmes at school are helpful because he needs structure</td>
<td>Not enough social intervention</td>
<td></td>
</tr>
</tbody>
</table>

The above table analyses an important issue to deal with: the children’s social/emotional difficulties.

The parents of the two cases described different issues regarding their concerns, and who to approach at school, but they both agree on certain concerns.

The difference is that Freddie’s mother does not feel that the school provided intervention to support him - aside from the occupational therapy, where the SENCO did make two or three sessions where ‘he sat down with other children and talked about things like greeting and bullying’. Mother quoted that “he needs to learn social skills, how to understand people, and how to react to different emotions”. Oliver’s mother does express her concerns to staff and teachers at school and managed to change some of the school’s polices towards bullying. In the theme about resources of support, both parents agreed on the children’s teacher being the main supporter, and Oliver’s mother used books about children with AS to help her. Each parent stated her own experience of the most useful strategy to overcome the difficulties; they agreed that clear and direct, structured, in-school work functions the best with them. However, Freddie’s mother added an important point relevant to this research - a lack
of attention in school to develop his social skills. Oliver’s mother also stated that “he has an IEP review next week” and she does not feel that what they are doing is enough.

7.3.1.9 - Services to Support Child and Family

The questions were:

- Where does your child go to school, how long there?
- What support is offered to your child at school?
- What level of SEN is your child at school action, school action (plus) or with a Statement
- Have there been any issues over statementing? If so please explain.
- Is the level of support for your child satisfactory – explain what is offered; if not why not
- What contact does your child have with mental health services? With whom and frequency?
- What do they offer?
- Are you satisfied with this level of service?
<table>
<thead>
<tr>
<th>Areas</th>
<th>Freddie</th>
<th>Oliver</th>
<th>Similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Which school, how long</td>
<td>Since years 5</td>
<td>Since nursery</td>
<td>London</td>
</tr>
<tr>
<td>Support offered to your child at school</td>
<td>One term outreach where he does planned activities with children with autism from special school, weakly occupational therapy for writing and fine motor</td>
<td>Teacher assistant takes him during lunch periods to provide him with structured activities that allow him to play and learn at the same time, Uses typing device</td>
<td></td>
</tr>
<tr>
<td>Level of SEN at school</td>
<td></td>
<td></td>
<td>School action plan plus</td>
</tr>
<tr>
<td>Issues over statementing or lack of it</td>
<td>Feels there was a lack of support to educate the parents SEN support and getting statement.</td>
<td>She is going to pull his IEP to pieces and to suggest statement</td>
<td></td>
</tr>
<tr>
<td>Level of support for your child what is offered; if not why not</td>
<td></td>
<td>The level of support he receives in school is not enough</td>
<td></td>
</tr>
<tr>
<td>Contact with mental health services</td>
<td></td>
<td>She went to GP and they referred her to NHS Mental Health who sent her to a safe team who did an assessment and referred her back to a clinical psychologist; she is going around in circles</td>
<td>GP refers the child to NHS mental health who did the assessment</td>
</tr>
<tr>
<td>Satisfaction with this level of service</td>
<td></td>
<td>The assessment needs to be done in a group setting because that is where the problems are</td>
<td>One session of OT, need more support</td>
</tr>
</tbody>
</table>
Themes for the support family and child received summarized that both children attend a mainstream school in London, where Freddie is in year 6 and Oliver year 5, but both are in School Action Plus as their level of SEN. They are both offered some type of support, but Freddie receives less support. He was offered outreach service where he joined students from a special school for one term, and also sees the special education teacher for occupational training. When answering this area of the interview and in previous interview regarding resources, Freddie’s mother stated that - even though she did attend parent workshops offered by the NHS - she was still unaware about the type of services and the level of support her child could be offered. She added that she had only learned recently that children who need special help in school need to have a statement and collect evidence that he is not doing well. She feels that there was a lack of support to educate the parents about getting such a statement. Oliver, on the other hand, is offered support services during lunch periods, where the teaching assistant takes him to do structured activities that allow him to play and learn at the same time. His mother believes that what is happening on the playground is reflecting how he reacts in the classroom; this is affecting his education and possibly the education of others around him because he is being disruptive, therefore she is going in “all guns blazing” to try to get him statemented before he goes to high school. It is clear that both parents are seeking more support by requesting their children to be statemented. In addition to that, their mothers place emphasis on the important of social skills training to the point that Freddie’s mother suggested it for all children in school - not just for children with autism.

7.3.2 - Teacher Interviews

The teacher interviews were broken down into five sections and will be formatted as such. The sections are perception, causes, diagnosis, and impact in social/emotional life and intervention. Perception covered with six questions, diagnosis is covered with three questions, a cause is covered with two questions, impact in social/emotional life is covered with 12 questions and intervention is
covered with five questions. It is expected to see similarities between the teachers’ responses with parents’ responses in many areas. The similarities and difference in the resources are discussed in the discussion chapter.

7.3.2.1 - Perception

The questions were:

- When did your concerns first arise?
- What are the child’s strengths in their behaviour and approach to learning?
- Do you have any concerns about the child’s understanding of social skills?
- How would you describe the child’s academic performance?
- Do other children also have the same difficulties? Why?
- Does the child have any IEPs? What specific targets have there been-how has progress been towards these goals?
<table>
<thead>
<tr>
<th>Areas</th>
<th>Freddie</th>
<th>Oliver</th>
<th>Similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concerns first arise</td>
<td>Few months after starting school in year 5</td>
<td>At reception</td>
<td>Observed by teachers</td>
</tr>
<tr>
<td>The child’s academic performance</td>
<td>Passionate about reading, a fast reader with comprehension, very smart, has exceptional performance in all subjects and expected to exceed target level in English and science</td>
<td>Normal not affected by difficulties “quite bright”</td>
<td>Good academic performance</td>
</tr>
<tr>
<td>Other children with the same</td>
<td>Successfully transfer to High School, for him become comfortable asking for help when required.</td>
<td>He does not currently have any educational targets, handwriting</td>
<td>No other children this year in the same class</td>
</tr>
<tr>
<td>difficulties in class IEP,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>specific targets and progress</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child’s strengths in behaviour and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>approach to learning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concerns about the child’s</td>
<td>He lacks the skills needed to start a conversation</td>
<td>Behaviour with the other children was unusual and that he tended to isolate himself rather than play with his classmates</td>
<td></td>
</tr>
<tr>
<td>understanding of social skills</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The teachers’ responses about ‘when concerns occur’ are similar, in that both teachers were the first to observe behaviour differing from their typical peers - as they have other children to compare to.

Freddie was discovered at the age of 10 due to his recent move to the UK. Teachers describe the children’s academic level and favourite subjects similarly; both exhibit good academic performance.

Freddie’s teacher elaborated that he is passionate about reading, a fast reader with comprehension, very smart, has exceptional performance in all subjects and is expected to exceed target level in
English and science. On the other hand, Oliver’s teacher added that he is not affected by his difficulties and is ‘quite bright’. Stating the individual educational plan (IEP) indicated that each child has different targets. Whilst Oliver does not have any educational targets aside from handwriting, Freddie’s main target in the IEP was to successfully transfer to high school and for him become comfortable asking for help when required.

The theme of concerns regarding the child’s social skills in school presented that both teachers have concerns about their skills and way of interaction. Freddie’s teacher specifies that he lacks the skills to initiate an interaction and that he (the teacher) must prompt Freddie or another student to start a conversation. Oliver’s teacher stated that his behaviour with the other children was unusual and that he tended to isolate himself rather than play with his classmates.

7.3.2.2 - Diagnosis

The questions were:

- Has the child been diagnosed? By whom?
- How do you feel about this diagnosis? Did you want him/her to be diagnosed? Why?
- Do you understand that the child has special needs? How do you feel about that?
Table 41: Themes for Teachers’ Diagnosis

<table>
<thead>
<tr>
<th>Areas</th>
<th>Difference</th>
<th>Similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis</td>
<td>Formally been diagnosed</td>
<td></td>
</tr>
<tr>
<td>feeling about the diagnosis, request to be diagnosed</td>
<td>She was not surprised</td>
<td></td>
</tr>
<tr>
<td>understanding that the child has special needs</td>
<td>She was able to recognise signs of Aspergers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Understand and have knowledge about autism</td>
<td></td>
</tr>
</tbody>
</table>

The diagnosis is an important theme in the teachers’ interview, as it might play a role since they are in the high spectrum and normally concerns are noted by teachers when children start school. Both teachers were not surprised, as they have experience working with students that have Asperger’s Syndrome and thought the boys may have it as well. Both children were diagnosed but only Freddie’s teacher was formally informed. Teachers share the same feeling about wanting the children to be diagnosed.

7.3.2.3 - Impact on Social/Emotional Life

The questions were:

- Describe the child’s social interaction with you and with his peers
- Describe the child’s level of understanding social skills, e.g., greeting, responding when talked to.
- Describe the child’s ability to understand your feelings and the feelings of peers
- Is the child’s relationships effected by these difficulties? How?
- How do these difficulties make you feel?
- How do other children respond to this behaviour?
- How does the child’s behaviour affect your teaching and teaching plans?
- Does the child’s behaviour affect other children’s learning? How?
- What factors decrease or increase these features?

Table 42: Themes for Teachers’ Impact in Social/Emotional Life

<table>
<thead>
<tr>
<th>Areas</th>
<th>Difference</th>
<th>Similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>The child’s social interaction with you and his peers/level of understanding</td>
<td>Capable of having a conversation, but one sided, enjoys adult conversation and the attention he receives from adults. Believes that he feels comfortable speaking with her about his problems</td>
<td>Prefer interacting with adults. Does not spend time with peers</td>
</tr>
<tr>
<td>relationships affected by these difficulties</td>
<td>Lacks interaction with others</td>
<td>She finds that some of the children cannot cope with Oliver needing so much attention. Over dramatic, inappropriate responses to other children when sad</td>
</tr>
<tr>
<td>Expression and understanding emotions</td>
<td>Lacks the ability to properly interpret tone of voice, may confuse sarcasm with compliment, or may not recognize a compliment when one is given.</td>
<td></td>
</tr>
<tr>
<td>Other children respond to this behaviour</td>
<td>His difficulties occasionally cause other children to avoid interaction with him.</td>
<td></td>
</tr>
<tr>
<td>How does the child’s behaviour affect your teaching and teaching plans? Child’s behaviour affect other children’s learning</td>
<td>his behaviour is not directly affecting his teaching</td>
<td>That his attention during lessons is improving and she feels that he is less distracted. No</td>
</tr>
</tbody>
</table>
In the child’s social interaction with teachers and his peers theme, both teachers reported that the two cases prefer to interact with adults and do not spend as much time interacting with their peers. This finding correlates with the abnormal social interaction associated with children in the spectrum - they prefer to interact with objects or adults over children (Worley, 2012). Oliver’s teacher added that he enjoys adult conversation and the attention he receives from adults. She believes that he feels comfortable speaking with her about his problems. The difference is that Freddie struggles to start a conversation, but is happy to respond to anyone who wants to interact with him, and he is always making jokes. Oliver, however, is capable of having a conversation, but it is very one-sided. Another theme relating to social interaction is the impact of these difficulties on his relations with others. On that topic, Freddie’s teacher commented that they did restrict his interaction with others. Similarly, Oliver faces difficulties in relationships as some of classmates cannot cope with him needing so much attention.

Both children share similarities in the ‘ability to express and understand feelings’ theme, as other children with autism do. But each case has its own individual characteristics as stated by their teachers. Freddie’s teacher believes that he lacks the ability to properly interpret tone of voice. He may confuse sarcasm with compliment, or may not recognize a compliment when one is given. Oliver’s teacher describes him as “over dramatic”. She also describes an instance where Oliver displayed an inappropriate response to a sad story; he giggled and did not comprehend why other children were crying. Oliver’s teacher believes that he says inappropriate things to other children that upset them, but he does not fully understand his actions. Both teachers do not believe that the children’s behaviour directly affects their teaching nor other children’s learning. She does state that she needs to do extra work a few times a week to incorporate strategies for new activities.

7.3.2.4 - Intervention

The questions were:
• What opportunities do you have to express your concerns about the child and seek support?
• Has the child received any social skills training? What was it? How did it help?
• Who gives you support and how?
• Describe the teacher’s assistant role with the child if applicable.
• Are there other strategies you think should/could be used?

Table 43: Themes for Teacher’s Intervention

<table>
<thead>
<tr>
<th>Areas</th>
<th>Freddie</th>
<th>Oliver</th>
<th>Similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunities teacher have to express concerns about the child and support</td>
<td>Is able to contact special education needs coordinator</td>
<td>Had conversations with his mother to express her concerns about his interactions with other children.</td>
<td></td>
</tr>
<tr>
<td>Social skills training</td>
<td>No</td>
<td>Social training that is based on what Oliver wishes to talk about that day</td>
<td></td>
</tr>
<tr>
<td>Who gives you support and how?</td>
<td>Freddie goes to the special education needs teacher for occupational therapy and to be trained in fine motor skills</td>
<td>Teacher assistant support him part time in class, during lunch, uses typing device</td>
<td></td>
</tr>
<tr>
<td>Teacher assistant if applicable</td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Other strategies you could be used</td>
<td>Has developed a secret gesture and cards that remind him to open his book and work on the assigned tasks</td>
<td>Found that it is useful to incorporate extreme scenarios when assisting creative writing</td>
<td></td>
</tr>
</tbody>
</table>
In the intervention area, it was vital to ask the teachers about opportunities to express their concerns about the child and seek support when needed. This theme shows how teachers are different, depending on the resources available in school, and perhaps depending on the child’s parents being available for approach when concerns occur. Freddie’s teacher mentioned that she does seek support from the SENCO and Oliver’s teacher talked about how she expressed her concerns about his interactions with other children to his mother. No other resources were mentioned. Another important aspect in the research investigated if the children received social skills training. In that category, Freddie did not receive any while Oliver received social training, based on what he wishes to talk about on that day. She provides structured activities to play and learn, incorporating drama into the sessions along with tasks such as creative writing. In the strategies teachers use to work with children, Freddie’s teacher has developed a secret gesture and cards that remind him to open his book and work on the assigned tasks; Oliver’s teacher has to vary her strategies based on his mood, but incorporates extreme scenarios when assessing him in writing.

7.3.3 - Children’s Interviews

The children’s interviews took place after the children got to know the researcher. The children’s interviews were broken down into three sections and will be formatted as such. The sections are: home life, school life and intervention, and child’s strengths and weaknesses in emotional/social understanding. Home life is covered with five questions. School life and intervention is composed of nine questions, and child’s strengths and weaknesses in emotional/social understanding are covered with eight questions.

7.3.3.1 - Home Life

The questions were:

- What do you like to do when you are free at home?
• Whom do you like to play with?
• How is your relation with your mother/ father/ brother sister?
• How can you let your family know how you feel?
• Can you tell when your mother/ father/ sister or brother feels unhappy or hurt? What do you do?
Table 44: Themes for Children’s Interview Home Life

| Areas                          | Freddie                  | Oliver                  | Similarity                  |
|-------------------------------|---------------------------|-------------------------|-----------------------------|-------------------|
| Activities in free time at home | Read                      | Play with his sister    | Play computer games         |
| Play with whom                | Enjoy having friends at home but sometimes he is busy, his mother invites friends over more than he gets invited | Dad and Mum            | Plays with his sister       |
| Relationship with family members | His sister is not always nice to him so he does not get to spend much time with her, little things in common with sister | His sister annoys him once she starts breaking game rules | Sibling rivalry    |
| Ways of expressing feelings to family | Sometimes tell his mother but she does not help him, he jump in the garden to remove his stress | most of the time he can tell his parents how he feels, however sometimes he does not because they might be frightened | Sometimes verbally show his feeling by telling his parents |
| Perception and responding to emotions | Faces sometimes straight to him, He can recognise sometimes if his mother is sad and tries to comfort her | He can recognise if his sister is upset from her body language but he does not care if he hurts her a little bit, would be sad if she does not play with him | Sometimes can recognise parents and siblings feelings |

When Freddie and Oliver were asked what they like to do at home and with whom they play - as presented in the table - the common activities between them were computer games, reading and playing with siblings. Freddie described his relationship with his sister by stating she is not always nice to him so he does not get to spend much time with her. He added that she may play for a short amount of time, but they do not have much in common, so any interaction is brief. As expected and stated in the methodology chapter, children with autism may unintentionally hide the truth and
underestimate reality. This analysis is explained in the discussion chapter. Freddie said he does enjoy to have friends over to play, although he does not always have time for these interactions due to homework. He has not spent much time at friends’ houses lately because he has been inviting lots of people over to his house; occasionally his mother will invite friends over without his knowledge, and he will come home not expecting to have a friend there. Oliver described his interaction with his sister as follows: she will usually play very well, until she starts losing, which happens most of the time. At that time, she pretends not to know the rules and this annoys him. He also said he would play with his mum or dad.

Their statements of being willing to interact with family members or friends contradict parents’ and teachers’ statements. This issue is covered in the discussion chapter. Ways of expressing their feelings to others is a major aspect in emotions. In that category, children showed different responses as Freddie sometimes tell his mother, but he feels that she does not help him and that he deals with his negative emotions by jumping in the garden to remove his stress, whereas most of the time Oliver tells his parents how he feels, however sometimes he does not because they might be frightened. This difference presents the children’s perspectives regarding their own emotions and their interaction with others. The last theme selected in the family life area is the children’s ability to recognise the feelings of family members and how they react towards them, i.e., perception and responding to feelings. The agreement was that sometimes they are able to recognise parents’ and siblings’ feelings. Going into more detail sheds more light about the way children with autism understand the emotions of others. Freddie explained that sometimes he can decipher the feelings of his mother and sister, but sometimes he cannot. He added that his sister may become very straight-faced and act like he is not there, which makes it hard for him to tell how she is feeling. Oliver also has his way of explaining that he can mostly tell when someone else in the house is feeling upset and he can always tell when they are feeling sad. He added that he can tell when his sister is upset because of her body language. Interesting in their contradiction, these findings were analysed regarding the children’s reaction towards negative feelings of others in their family. Freddie described that he will comfort his mother if she is sad and if it is his fault, but Oliver said that if his sister is upset, sad, and angry he would feel
either happy or sad; he would feel happy if she were upset because he had annoyed her, but he would feel sad if she will not play with him.

7.3.3.2 - School Life and Intervention

The questions were:

- What do you like to do during playtime at school?
- How many friends do you have? How did you meet them?
- How do you start a conversation with them?
- How can you let your friends know how you feel?
- How does it make other people feel?
- What are your favourite subjects?
- Do other children ask you to play with them?
- What support do you get in school?
- What did you learn from these activities?
The questions to children regarding school life revolve around their social interaction with peers, playtime, and other services they receive at school. The children’s responses were similar regarding the social interaction; they both stated that they play with friends and read. The data they gave though indicated that they spend most of their time alone. Freddie said that he mostly reads, as the teacher will allow him to get a book from the library when he is not in the mood to talk to anyone, and Oliver enjoys sitting in the shade and writing stories. He also noted that he enjoys to read, but is only allowed to do that on Thursdays. The next theme addresses how many friends they have and how they became friends. Oliver stated, ‘Yes, loads’, but only named three and Freddie described that the teacher

<table>
<thead>
<tr>
<th>Areas</th>
<th>Freddie</th>
<th>Oliver</th>
<th>Similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Difference</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Areas</td>
<td>Difference</td>
<td>Similarity</td>
<td></td>
</tr>
<tr>
<td>Activities at play time in school</td>
<td>Play with friends but mostly reading</td>
<td>Physical activities with friends, writing stories “Loads” but he only named 3</td>
<td>Play with friends Read three friends</td>
</tr>
<tr>
<td>Number of friends and how they met</td>
<td>Teacher kept making him switch seats until he found someone he got along with.</td>
<td>No problems</td>
<td></td>
</tr>
<tr>
<td>How to start a conversation</td>
<td>Does not recall starting a conversation to make friends</td>
<td>does not tell his friends how he feels because they would think he is weird, believes children do not talk about their feeling</td>
<td>Does not show feelings to friends</td>
</tr>
<tr>
<td>Expression</td>
<td>Hides his feeling by thinking happy thoughts Doesn’t want his friends to think differently of him</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Favourite subjects</td>
<td>History</td>
<td>Science</td>
<td>English and ICT</td>
</tr>
<tr>
<td>Chosen by children to play with them</td>
<td>Sometimes</td>
<td>They have never directly asked him to play, does not like sports require passing because they will not choose him</td>
<td>No</td>
</tr>
<tr>
<td>Support in school</td>
<td>Handwriting and other support for ‘people that cannot help themselves with their problems’</td>
<td>Various activities during lunch time such as computer, sports, group lunch</td>
<td></td>
</tr>
</tbody>
</table>

Table 45: Themes for Children’s School Life and Intervention
switched his seats many times until he found someone he got along with. He added that he has ‘three friends, two that are mean and one that is always helpful, but that he also does not play with’. The theme about how to start a conversation shows that Freddie does not recall a time when he started a conversation in order to make friends, while Oliver said he has no problem interacting with his friends. The theme regarding expressing emotions presented agreement on this aspect of emotions, as they do not show their emotions to their friends. Their explanation was different - Freddie stated he is able to tell his friends how he feels, however he can hide his emotions whenever he wants by thinking happy thoughts so that his friends do not think differently about him. Oliver, on the other hand, does not discuss his feelings with his friends because they would think he is weird. He elaborates on that by saying that children do not usually talk about their feelings. Both children’s favourite subjects are English and ICT and they stated that they receive support. Freddie’s support was through handwriting training and additional support for ‘people that cannot help themselves with their problems’ on a couple of Fridays; Oliver’s support is at lunchtime, and involves doing various activities such as computer, sports and group lunch.

When they are asked whether other children asked them to play, they gave different responses but the underlying answer was no. Freddie explained sometimes he is chosen during games but could only recall one time during a language club when a girl asked him a question and was helpful to him. Oliver stated that they have never directly asked him to play and he does not like sports, because they will not choose him.

7.3.3.3 - Child’s Strengths and Weaknesses in Emotional/Social Understanding

The questions were:

- Can you tell when someone close to you feels unhappy or hurt? What do you do or say to them?
- Write a list of things that make (child’s name) sad or upset.
- Write a list of things that make (child’s name) angry.
- How do you deal with those feeling?
- Suggest ways of cheering yourself up.
- What makes you happy?
- What do you do if you have a problem at school/at home? Whom do you go to?
- If you do not like someone, what do you say when he/she wants to play or speak to you?

Table 46: Themes for Child’s Strengths and Weaknesses in Emotional/Social Understanding

<table>
<thead>
<tr>
<th>Areas</th>
<th>Freddie</th>
<th>Oliver</th>
<th>Similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognising if someone close feels unhappy or hurt, response to them</td>
<td>He said he is shocked and he will run right over and see what happened</td>
<td>He said he can always tell.</td>
<td>Recognise but does not respond</td>
</tr>
<tr>
<td>Things that make the child sad</td>
<td>When his friends are upset, when friends are mean</td>
<td>Sad pain like when someone dies</td>
<td></td>
</tr>
<tr>
<td>Things that make the child angry</td>
<td>When he gets sad, same things that make him sad make him angry</td>
<td>Argument with sister</td>
<td></td>
</tr>
<tr>
<td>Dealing with sad and anger</td>
<td>Ignore others who bully him</td>
<td>He does not know how he does it, he just does it</td>
<td>Can deal with sad feelings</td>
</tr>
<tr>
<td>Suggest ways of cheering yourself up.</td>
<td>Think happy thoughts</td>
<td>Play a game or talk to a friend</td>
<td></td>
</tr>
<tr>
<td>Things make him happy</td>
<td>When he gets picked for what he wanted to get picked like games or club</td>
<td>Playing a game or talking to a friend.</td>
<td></td>
</tr>
<tr>
<td>How to deal with problems</td>
<td>At school he goes to the teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response to someone you don’t like but wants to play with you</td>
<td>He has not been in that situation, he may just join in a game and be nice, however if it is a popular game and turns into a large crowd he will leave.</td>
<td>He would say no thanks and run away.</td>
<td></td>
</tr>
</tbody>
</table>
These questions were all about the emotional aspects in recognition, expression, responding, cause of emotions and ways to deal with negative emotions. On emotional recognition and response to hurt or sad people, they agreed that they are able to recognise this; Freddie said he does respond, but what they said afterwards showed that they do not react or empathise with friends. Although Freddie stated that he is ‘shocked and he runs right over and sees what happened’, he did not mention any specific reaction - this was confirmed by an example he talked about where he stood in front of a hurt friend, then went on explaining what others did. For Oliver, regarding his friends, he stated that he is able to know when his sister is upset or hurt, but he stated unusual clues other than facial expression, body language of tone of voice. Further questions were asked regarding his friends’ emotions, he explained that it is confusing for him, especially if they are hiding their feeling. Statements regarding what makes them feel sad revealed different perspectives. Freddie’s response revolves around other people - when his friends are sad or when someone upset him. He also added that rivalry with his sister makes him sad. Then, he added that the same things that make him feel angry also make him feel sad. Oliver, on the other hand, stated that pain and sad things make him sad and that he is not upset when he argues with his sister but rather feels angry, adding that he knows that being upset and annoyed (an angry feeling) are two completely different things. Their way of dealing with negative emotions was similar - they both can deal with them. Oliver does not recall how he deals with his anger but he does control it, and further questions regarding ways to make himself happy revealed that he talks to friends or plays a game. Freddie said that he ignores people who bully him or upset him as a way of controlling his anger and he can make himself think happy thoughts as a way to cheer himself up. The last theme was about the children’s ability to respond appropriately. They both gave appropriate responses to the question, in that they didn’t give negative verbal response to the other party.

7.4 - After the Intervention

7.4.1 - Parents’ Follow up Interview:
• Describe your observation on the child’s general social interaction with others since completing the sessions.
• How is his social interaction with his current friends?
• What is the child’s effort in maintaining his friendship? E.g. initiating interaction and conversation with friends.
• Did the child gain new relationships? Describe how?
• Describe the child’s ability to express his own feelings.
• Describe the child’s ability to recognise your feelings and the feelings of others’.
• In general, do you feel that the intervention programme has an impact in your child’s social life?
The above table shows the analysis of the two cases according to the parents. In the mothers’ observation of their children’s social interaction with others, there was agreement in noticing better social interaction with friends and coping better with kids but further details represent differences regarding the levels of improvement between the two. Freddie’s mother found him to have more interest in meeting his friends after completing the sessions; he still seems more interested in computer games than interacting with his family. She added that he has taken some time to teach his sister, interaction with new friends.

Table 47: Parents’ Follow up Interview

<table>
<thead>
<tr>
<th>Areas</th>
<th>Freddie</th>
<th>Oliver</th>
<th>Similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation on the child’s general social interaction with others since completing the sessions</td>
<td>More interested in meeting his friends, still spend more time with computer than family but had been teaching his sister computer games, listens better and follow suggestions from friends</td>
<td>More control over his anger, has learned to ask for help and is getting along better with his sister, interaction with new friends</td>
<td>Better interaction with friends, Coping better with sister</td>
</tr>
<tr>
<td>Social interaction with his current friends</td>
<td>He has gone to a friend’s house to play and asked to invite friends over to his house.</td>
<td>He has asked to invite friends over to play and now speaks to his friends at school.</td>
<td>Asks to invite friends over</td>
</tr>
<tr>
<td>Child’s effort in maintaining his friendship E.g. initiating interaction and conversation with friends</td>
<td>He gives more attention to other’s faces and maintains eye contact more.</td>
<td>Oliver is more accepting of some of his classmates’ invitations to play with them and has started eating lunch with classmates</td>
<td>Inviting friends and accepting invitations</td>
</tr>
<tr>
<td>Gaining new relationships</td>
<td>Went to a friends’ house from school for the first time</td>
<td></td>
<td>Both Freddie and Oliver became friends out of the sessions</td>
</tr>
<tr>
<td>Express his own feelings</td>
<td>He has learned to go to his room before “exploding” when he is angry.</td>
<td>He has been using emotion words to express his feelings more since the intervention.</td>
<td>Better ability</td>
</tr>
<tr>
<td>Recognise parents’ feelings and the feelings of others’</td>
<td>He has more interest in looking at her and understanding her emotions, such as excitement</td>
<td>It is improving and he is able to recognize when his sister is upset and change his actions accordingly.</td>
<td>Better ability</td>
</tr>
<tr>
<td>Impact of intervention programme on child’s life</td>
<td>The intervention gave him a sense of calmness in his personality and interactions with family, as well as he has an increased interest in spending time with friends.</td>
<td>The intervention had a positive impact; she has noticed more stability in Oliver’s relationships with friends at school.</td>
<td>Positive impact</td>
</tr>
</tbody>
</table>
sister how to play computer games with him. Oliver’s mother noticed that he displayed more control over his anger. Oliver has also learned to ask for help and is getting along better with his sister. Oliver’s mother has also noticed an increase in his interaction with new friends. When asked about the children’s effort in maintaining friendship, e.g., initiating interaction and conversation with friends, both asked to invite friends over more than usual. Freddie’s mother has noticed that he now listens and follows suggestions when interacting with his friends. In terms of initiating and maintaining friendships, Freddie has gone over to his friend’s house from school to play and has been invited by Oliver from this group; he has also asked his mother to invite friends over to his house. Oliver’s way of initiating and maintaining relationships involves asking his mother to invite his friends over to play, and she has noticed him speaking to his friends at school when she comes to pick him up. Oliver also seems more accepting of some of his classmates’ invitations to play with them, and he has told her that he has been eating lunch with his classmates as well.

When asked about expressing emotions, Freddie’s mother finds that he is not easily angered. After the sessions, he remained stubborn, but he has learned to go to his room before “exploding” when he is angry. Oliver’s mother has found him to be using emotion words to express his feelings more than he was prior to his participation in the sessions - words such as content and proud.

In the children’s ability to recognise emotions, both parents agreed that there was an improvement. Freddie’s mother has always found him to be considerate of others’ feelings, but after the intervention she noticed that he gave more attention to others’ faces and maintaining eye contact. She then gave an example of one time when she was feeling excited and noticed him looking at her and realising it. Oliver’s mother said that he is now able to realize when his sister is upset and change his actions accordingly.

Parents cited the positive impact of the intervention on the children’s social interaction with friends and families. Freddie’s mother believes that the intervention gave Freddie a sense of calmness in his personality and in his interactions with his family. She has also noticed an increased interest in spending time with his friends. Oliver’s mother believes that the intervention programme has definitely had a positive impact on him. Since the intervention, she has noticed more stability in Oliver’s relationships with his friends at school.
7.4.2 - Teachers’ Follow up Interview

The questions were as follows:

- How is the child interaction with children in playground and in class?
- How does he cope when the task requires group work?
- Does he use new social skills to overcome his delay?
- How does he express his feelings (anger)?
- Does the child understand your emotions and the emotions of others’?
### Table 4: Teachers’ Follow up Interview

<table>
<thead>
<tr>
<th>Areas</th>
<th>Freddie</th>
<th>Oliver</th>
<th>Similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction with children in playground and in class</td>
<td>He spends playtime reading by himself, but has improved in participating in-group work.</td>
<td>Oliver is spending more time with other boys and girls.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coping with group work tasks</td>
<td>Has noticed that he listens to others and waits until the appropriate time to respond and sees himself as part of the team.</td>
<td>He doesn’t mind group work as long as the instructions are clear and everyone follows them.</td>
<td>Engage in group work.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using new social skills to overcome his delay</td>
<td>Stand up to bullying and is happy to interact with someone when suggested by teacher.</td>
<td>He realizes that he has to make an effort to interact with others or they won’t interact with him.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to express feelings</td>
<td>He is more open about feelings, aware of jokes and raises his voice to bullies, which is an improvement.</td>
<td>He doesn’t lose his temper as much and has calmed down a bit since the intervention.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>understanding teacher’s emotions and the emotions of others’</td>
<td>His understanding depends on how well the teacher explains them and he can understand the difference between joking and sarcasm.</td>
<td>He now has the ability to notice when others are upset by their facial expressions and tries to control his anger because he knows it upsets those around him.</td>
<td></td>
</tr>
</tbody>
</table>

The table above illustrates the perceived effect of the intervention programme by follow-up questions to teachers. As regards interaction with peers in school there was not as much improvement with Freddie as with Oliver. Freddie’s teacher noticed that he spends playtime reading on his own, and does not engage in conversation with other students, yet the teacher has seen improvement when he participates in group work. She feels that he sees himself as part of the team now, and notices him...
listening to others and waiting until the appropriate time to respond. The same improvement in group work is seen with Oliver, as his teacher stated, with an additional improvement in interacting with peers during play time.

In the next theme - regarding using skills learned from the intervention to overcome delays - Freddie’s teacher believes that his new social skills have given him the ability to stand up against bullying. He also finds that he is happy to interact with someone when it is suggested to him; Oliver’s teacher believes that his new skills have helped him to realize that he has to make an effort to interact with other students or they are not going to interact with him.

The final theme is recognising and expressing feelings. Agreement on improvement has been seen but the findings reveal different methods and levels of improvement. Freddie’s teacher has found that his ability to understand her emotions depends on how clear she is and whether or not she explains them. She added that he became more aware of the jokes made by other students and can now differentiate between joking and sarcasm. Freddie’s teacher has noticed that he has become more open about his feelings, and, when bullied, Freddie raised his voice to the other children, but his teacher views this as an improvement in his ability to express his feelings and stand up for himself. Oliver’s teacher has noticed that he does not lose his temper as much and has calmed down quite a bit since the intervention. Oliver has developed the ability to notice when others are upset by their facial expressions. He tries to control his anger because he now realizes that it upsets people around him.

7.4.3 - Children’s Follow up Interview:

The questions were as follows:

- What have you learn from the sessions we’ve done together?
- We looked at many facial expressions some you already knew and some are new. How did it help you with friends?
• We also learned if other friends feel sad, depressed or angry so if a friend of yours has such a bad feeling what can you do to help him?

• Where you able to use the skills we learned with your family?

• We all have bad days and feel upset or sad or even angry we learned during sessions some techniques to express our feelings in a good way so we don’t hurt other people. Were you able to do that?

• What are your favourite activities?

• How is your relationship with your friends at school?

Table 49: Children’s Follow up Interview

<table>
<thead>
<tr>
<th>Areas</th>
<th>Difference</th>
<th>Similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Things learned from the sessions</td>
<td>Learned to keep his emotions positive and not be rude to others, understand facial expressions. He is more cooperative at school.</td>
<td>Learned to evaluate people’s feelings by their facial expressions, not to get angry when playing with others, to ask friends if they need help and can identify when his sister is upset and change his actions.</td>
</tr>
<tr>
<td>How learning about different emotions helped you with friends</td>
<td>Learned that knowing the different between angry and sad and other emotions make him know what his friends feel.</td>
<td>He asks friends if they need help when he notices that they are sad, depressed or angry.</td>
</tr>
<tr>
<td>Respond to friends emotions</td>
<td>The lessons assisted him in remembering how he is supposed to react to others when they feel sad, depressed or angry.</td>
<td>He asks friends if they need help when he notices that they are sad, depressed or angry.</td>
</tr>
<tr>
<td>Using skills learned with friends and family</td>
<td>Spend more time</td>
<td>He can identify when his sister is upset and adjust his actions accordingly.</td>
</tr>
<tr>
<td>Techniques to express your feelings when angry</td>
<td>When he cannot control his anger, he will go to his room instead of raising his voice.</td>
<td>He is capable of controlling his temper when other children are rude or disagree.</td>
</tr>
</tbody>
</table>
with him as that could cause them not to play with him again.

<table>
<thead>
<tr>
<th>favourite activities</th>
<th>His favourite was Mr Face (making emotions in a mat), finding feelings from the wall and the feelings thermostat.</th>
<th>Creating and filming Mr Apple and Mrs Orange (creative acting), he learned the most from the activity.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationship with your friends and teacher at school</td>
<td>Has been playing with Oliver</td>
<td>Listen to his teacher</td>
</tr>
<tr>
<td></td>
<td>They have been able to maintain friendships, improved their relationships with their teacher</td>
<td></td>
</tr>
</tbody>
</table>

The table above illustrates the similarities and the differences between the children in social skills and emotional understanding post-intervention. The first theme was about what children learned from the session. It is clear that the children do recall skills learned from the sessions after a few weeks of the programme. Both gave positive responses, and stated more knowledge about emotional recognition.

Freddie reported that he learned to try to keep his emotions positive, and not to fight or be rude to others. He has also learned that knowing the difference between angry and sad and other emotions make him know what his friends feel. For Oliver, his participation in the intervention programme has taught him to evaluate what people feel by looking at their faces. He has also learned not to get angry when he is playing with other children, as that could cause them not to play with him again.

A question regarding how would they react when a friend is sad or hurt - responding to emotions theme - presented an improvement in that area. Oliver stated that he now knows to ask his friends if they need help when he notices that they are sad, down or angry. After participating in the sessions, he can identify when his sister is upset, and will change his actions accordingly. Freddie believes that the sessions assisted him in remembering how he is supposed to react to others when they feel sad, depressed or angry.

Knowing how children used the skills learned from the sessions was summarized; they both learned different skills but the skills certainly enhanced their interaction. The sessions have taught Freddie to
be more cooperative with his friends at school and have helped him to spend more time with his family; Oliver can control his anger around his friends to gain acceptance.

For the next theme regarding techniques to express feelings when angry. Freddie stated that when he cannot control his anger he would go to his room rather than raise his voice. Oliver said that he is capable of controlling his temper when other children are rude or disagree with him, as that could cause them not to play with him again.

The children chose different activities from the interventions as their favourite. Freddie’s favourite was Mr Face, while he also liked finding the feelings from his list on the faces stuck to the wall and the feelings thermostat. Oliver’s favourite activity was creating and filming Mr Apple and Mrs Orange. He learned the most from the activities that explained how to say no to someone nicely.

The final theme in this analysis was about relationships with friends and teachers at school. They agreed that they have been able to maintain friendships and have improved their relationships with their teacher. Freddie has found it easy to make new friends at school. He mentioned that he is playing with Oliver sometimes, and he has also been able to maintain relationships with other friends. Oliver has maintained his old friends and made new ones. He is capable of controlling his temper when other children are rude or disagree with him. He also feels that his relationship with his teacher is good; she understands him and he listens to her and controls his temper.

7.5 - Assessments

Both children went through a Neurodevelopmental team assessment from their local mental health NHS Trust. In the interviews with parents, they reported that teachers first noticed the children’s difficulties then suggested to parents to see the GP for referral. Bellow a table summarise the assessment of Oliver and Freddie. (See appendix 20 for full assessment reports).
The assessments were broken down into five sections and are formatted as such. Family history, developmental and medical history is not included because they are identical data to parents’ interview. The sections are:

- Presenting issues at referral.
- Assessment tools.
- Formulation
- Diagnosis
- Recommendations

### Table 50: Oliver and Freddie’s Assessment

<table>
<thead>
<tr>
<th>Areas</th>
<th>Difference</th>
<th>Similarities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presenting issues at referral</td>
<td>Concerns with social behaviour noted by parent and school, able academically, extreme difficulties dealing with change, oversensitivity to smells, noise, extreme reaction to being told ‘no’, tantrum</td>
<td>Concerns regarding social communication difficulties, attention, poor social skill, obsession to TV and books, angry when asked to conform</td>
</tr>
<tr>
<td>Assessment tools</td>
<td>Asperger’s Syndrome Diagnostic Interview (ASD-I) with parents for impairment in 7 areas, teachers report, interview with the child, social communication questionnaire, strength and difficulties questionnaire, short sensory profile, The Autism Diagnostic schedule</td>
<td>Interviews with parent, teacher and child, educational psychologist report, strength and difficulties questionnaire, DuPaul questionnaire, short sensory profile, children’s communication checklist, Emotion cards, Happé stories, Sequencing cards</td>
</tr>
<tr>
<td>Formulation</td>
<td>Oliver is 6 years old and having issues with reciprocal social interaction with peers, all absorbing interest patterns, dealing with change, underlying comprehension and expressiveness of his voice, significant issues with overall stress, emotional distress, inappropriate response to others when they are hurt, hyperactivity and attention difficulties, enjoyed</td>
<td>Freddie is 10 years old boy moved to England at the age of 8, transition and bullying contributed more to his difficulties but problems continued after settling, lack of interest with social interactions, demonstrated inappropriate social and emotional behaviours, difficulties understanding complex</td>
</tr>
</tbody>
</table>
interaction with adults, but the conversation was very one sided, talking at length about his own interests, his voice was at times squeaky and twice had a mechanical quality, unusual eye contact, exaggerated set of facial expressions, issued with auditory filtering and visual and auditory sensitivity, advanced language and reading skills, above average in numeracy, severe allergies

emotions, appear impulsive at school, has peer problems, resistant to support, poor motor skills, motor coordination and sensory processing, limited eye contact, slow at completing school task, average verbal IQ, 16 year level of reading, difficulties with pragmatic language appears to have a qualitative impairment in social interaction, restricted patterns of behaviour, i.e. refusing to do an activity at school until a specific pencil had been found, difficulties with social communication are causing significant impairment with social functioning at home and school

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Asperger’s Syndrome with very advanced vocabulary Atypical Autism (DSM-IV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommendation</td>
<td>early support series of information for parents, classroom Strategies for School, parents will be referred to the Parents Educational/ASD Support Group, referral to OT service regarding sensory and handwriting his family will be offered sessions aimed at both promoting understanding and the effects of his difficulties, and skills in managing him, Occupational therapy assessment, social skills training at school, need structured work environment in school, support from educational psychologist Parents sessions, OT, instruction for school</td>
</tr>
</tbody>
</table>

The table above show how the diagnosis criteria are similar in the deficit areas of HFA, though each case is unique. The similarities were noticeable in the issues of referral, where both children were referred for parents’ and teachers’ concerns regarding social communication and anger behaviour. The table also shows other concerns that are different between Oliver and Freddie.

There are similarities in the tools used for diagnosis, as social communication questionnaire, strength and difficulties questionnaire and short sensory profile were used for both boys, but other tools are presented in the table that are different. Another agreement was seen in the formulation area where
both children present inappropriate social and emotional behaviours, reciprocal social integration, resistance to change, eye contact problems, advanced language and high reading level. For the practicality of the research, the difference in this theme is presented in the table.

The diagnosis is under the high functioning categories where Oliver was diagnosed with Asperger’s Syndrome with very advanced vocabulary and Freddie was Atypical Autism, PDD NOS.

Both parents were recommended similar procedures to help them and their children such as parents’ sessions, OT and instruction for school but other difference is presented in the analysis table above.
7.6 - Qualitative and quantitative analysis

The following tables follow the mixed method design (or as it is known, the ‘triangulated design’) that data are presented with the quantitative, in order to find any pattern of corroborating evidence. Since this also highlighted in the table. This method will give the complete picture of the study.

Table 51: Pre- and post-level quantitative and qualitative analyses for Oliver

<table>
<thead>
<tr>
<th>Data/source</th>
<th>Teacher</th>
<th>Parent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>History</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developmental and medical history</td>
<td>N/A</td>
<td>Older child, has one sister, milestones, concerns about boundaries, suffers from separation anxiety</td>
</tr>
</tbody>
</table>
| Family life                    | N/A                                                                    | Lives with parents, favours solitary activities, parental style is punishing, would like to stop her own |够好

| **Pre-intervention measures**  |                                                                         |                                                                        |
| M1: Social skills              | 23 (n = 3, M = 25.33, SD = 2.08) scores below mid-point of 30          | 36 (n = 3, M = 27.67, SD = 0.3) scores over mid-point of 30          |
| M2: Social competence          | 4 (n = 3, M = 4.33, SD = 1.53) scores below mid-point of 9             | 3 (n = 3, M = 3.67, SD = 0.13) scores over mid-point of 9           |
| M3: Emotional Q I              | N/A                                                                    | N/A                                                                   |
| M4: Social/emotional checklist | N/A                                                                    | 38 (n = 3, M = 33.67, SD = 4.0) scores over mid-point of 40          |

| **Pre-intervention functioning (qualitative data)** |                                                                         |                                                                        |
| F1: Diagnosis                    | The child has been formally diagnosed, teacher was supportive and chose the child to be diagnosed. Teacher was not surprised; was able to recognise signs of Asperger’s syndrome, understand it and have knowledge about autism | Asperger’s syndrome at age 3, first, parents understand, mother is devastated, shared the information with friends and family, child is aware of diagnosis but does not know what exactly it is. Academic skills, fast reading, writing, good relationship with sister. |
| F2: Descriptions                | Teacher was concerned from reception year, is very intelligent, and has good academic skills, no other children in class with the same diagnosis, currently his IEP has only writing skills as targets, his behaviour with other children is unusual and tended to isolate himself rather than playing with classmates | Does not like change of routine, does not have problems starting conversations, no friends visit, knows how to carry a conversation, does not show his feelings to others, understands extreme emotions, does not sympathise, starts conversations a lot, makes friends so they don’t change, does not like change of routine/needs warning, understands extreme emotions, does not sympathise, starts conversations a lot, makes friends so they don’t change |
| F3: Causes                      | No answer                                                              | Lack of structure and input suggest that school provided no help    |

**Table Data**

<table>
<thead>
<tr>
<th>Data/source</th>
<th>Teacher</th>
<th>Parent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>History</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developmental and medical history</td>
<td>N/A</td>
<td>Older child, has one sister, milestones, concerns about boundaries, suffers from separation anxiety</td>
</tr>
<tr>
<td>Family life</td>
<td>N/A</td>
<td>Lives with parents, favours solitary activities, parental style is punishing, would like to stop her own</td>
</tr>
</tbody>
</table>

| **Pre-intervention measures**  |                                                                         |                                                                        |
| M1: Social skills              | 23 (n = 3, M = 25.33, SD = 2.08) scores below mid-point of 30          | 36 (n = 3, M = 27.67, SD = 0.3) scores over mid-point of 30          |
| M2: Social competence          | 4 (n = 3, M = 4.33, SD = 1.53) scores below mid-point of 9             | 3 (n = 3, M = 3.67, SD = 0.13) scores over mid-point of 9           |
| M3: Emotional Q I              | N/A                                                                    | N/A                                                                   |
| M4: Social/emotional checklist | N/A                                                                    | 38 (n = 3, M = 33.67, SD = 4.0) scores over mid-point of 40          |

| **Pre-intervention functioning (qualitative data)** |                                                                         |                                                                        |
| F1: Diagnosis                    | The child has been formally diagnosed, teacher was supportive and chose the child to be diagnosed. Teacher was not surprised; was able to recognise signs of Asperger’s syndrome, understand it and have knowledge about autism | Asperger’s syndrome at age 3, first, parents understand, mother is devastated, shared the information with friends and family, child is aware of diagnosis but does not know what exactly it is. Academic skills, fast reading, writing, good relationship with sister. |
| F2: Descriptions                | Teacher was concerned from reception year, is very intelligent, and has good academic skills, no other children in class with the same diagnosis, currently his IEP has only writing skills as targets, his behaviour with other children is unusual and tended to isolate himself rather than playing with classmates | Does not like change of routine, does not have problems starting conversations, no friends visit, knows how to carry a conversation, does not show his feelings to others, understands extreme emotions, does not sympathise, starts conversations a lot, makes friends so they don’t change, does not like change of routine/needs warning, understands extreme emotions, does not sympathise, starts conversations a lot, makes friends so they don’t change |
| F3: Causes                      | No answer                                                              | Lack of structure and input suggest that school provided no help    |
The table also presents a qualitative description of Oliver’s life as reported by his mother, a teacher and a teaching assistant, as follows:

<table>
<thead>
<tr>
<th>Post-intervention measures</th>
<th>Post-intervention functioning (qualitative data)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1: Social skills</td>
<td>Spending more time with other boys and girls, doesn’t mind group work as long as the instructions are clear and everyone follows them</td>
</tr>
<tr>
<td>M2: Social competence</td>
<td>As above</td>
</tr>
<tr>
<td>M3: Emotional Q I</td>
<td>He realises that he has to make an effort to interact with others or they will not interact with him</td>
</tr>
<tr>
<td>M4: Social/emotional checklist</td>
<td>Doesn’t lose his temper as much and has calmed down a bit</td>
</tr>
<tr>
<td>F1: General observation on social interaction with others</td>
<td>He has been using emotions, like proud and content</td>
</tr>
<tr>
<td>F2: Interaction with current friends and or new friends</td>
<td>More accepting of some of his classmates rather than others and has asked to invite friends over to play</td>
</tr>
<tr>
<td>F3: Child’s effort in maintaining friendship</td>
<td>Has asked to invite friends over to play</td>
</tr>
<tr>
<td>F4: Ability to express his feelings</td>
<td>Has the ability to notice when others are upset by their facial expressions and tries to control his anger because he knows it upsets those around him</td>
</tr>
<tr>
<td>F5: Ability to recognise emotions of others</td>
<td>It is improving and he is able to express when his sister is upset, and changed accordingly</td>
</tr>
<tr>
<td>F6: Impact of intervention on child’s life</td>
<td>Had a positive impact, not having a clash of personality</td>
</tr>
</tbody>
</table>

The above table provides an overall analysis of all the data collected for case one (Oliver). The pre-intervention measures compared with the post-intervention measures, the total scores show a notable increase in the social skills area according to Oliver’s report. However, the teacher reported the highest increase in the social skills area was increase in the social competence with peers by 5 points as rated by the teacher, 3 points as rated by the parents assessed with the EQi; YV reporting an increase on 12 points after the intervention. The parents reported a positive change.
and intervention in school is a possible cause of difficulties and that she suggested to the school to use a
gradual social withdrawal, and a lack of emotional response to others. She stated that the impact is
relationship to others is affected by these difficulties. The mother reported previous extreme bullying dealing with bullying as a result. At school, Oliver mentions that he likes to partake in physical activities his friends never ask him to join in with them. The interview investigated the type of services and intervention level of special education services and that a teaching assistant supports him on a part-time basis. He also
skills during lunchtime, as it causes distress to him. Further details were obtained from the teacher regarding speak, and that the activities vary. Examples of activities he received, according to Oliver, are group training that the mother reported that the level of support he receives at school is not sufficient and is planning to get a
attake place in an in-group setting, for the difficulties to appear, and that the services from the mental health

After the intervention Oliver remarked that he had learned to recognise people’s feelings by evaluating his actions accordingly. He also noted that he does not get angry when playing with friends, because someone needs help he should offer support. These findings agree with what the mother reported of him not feeling anger. The teacher also observed that Oliver is spending more time playing with his peers and accepting to follow the rules. Regarding social interaction, the mother noted that he increased asking his current friends to school. She also added that he became friends with Freddie from the current intervention group and that he has more contact with current friends, and believed that he has a better relationship with his teacher. The teacher reported an effort to interact and maintain the interaction with peers, or they will not interact with him. This agreed with his friends, as well as his report that he would offer support if a friend is sad. The mother reported that the teacher noticed him accepting their initiation to play with them. The teacher also reported that his anxiety
intervention are of stable relationships with friends, better interaction with his sister and better relations

Table 52: Pre- and post-test quantitative and qualitative data for Freddie

<table>
<thead>
<tr>
<th>Data / source</th>
<th>Teacher</th>
<th>Parent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>History</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development and medical history</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Family life</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Lives with his sister</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
respond to initiation, kind to others, prefers interacting with adults, does not spend time with peers
Lacks interaction with others, lacks the ability to properly interpret tone of voice, may confuse sarcasm with a compliment, or may not recognise a compliment when one is given
His behaviour is not directly affecting teaching, teacher needs to do extra work with him to teach him strategies for new activities, his behaviour does not affect other children’s learning
distress
Recognises others’ negative emotions once he gets picked up for
Will be very kind and sympathetic
Is afraid of the team, is not fully involved in friendships and activities. Has a relationship, plays with friends, does not communicate his remarks

F5: Impact

<table>
<thead>
<tr>
<th>Answers were covered in the previous section (emotional and social interaction)</th>
</tr>
</thead>
</table>

F6: Intervention

<table>
<thead>
<tr>
<th>Teacher is able to contact SENCO, does not receive social skills training, goes to the special educational needs teacher for occupational therapy and to be trained in fine motor skills, does not have a teaching assistant, has developed a secret gesture and cards that remind him to open his book and work on the assigned tasks</th>
</tr>
</thead>
</table>

F7: Services for child and family

<table>
<thead>
<tr>
<th>Covered in intervention area</th>
</tr>
</thead>
</table>

Post-intervention measures

<table>
<thead>
<tr>
<th>M1: Social skills</th>
<th>37 (n= 3, M=35.67, SD 1.53) scores above mid-point of 30</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>M2: Social competence</th>
<th>8 (n=3, M= 7.67, SD 0.58) scores below midpoint of 9</th>
</tr>
</thead>
</table>
The table above present the overall analysis of all the data collected for case two (Freddie). The pre-intervention compared with the post-intervention measures the changes show a notable increase in Freddie’s social emotional intelligence level (EQi; YV) after the intervention and revealed a significant increase of 18 points in the total score. The mother also reported an increase in the social emotional skills and understanding of 18 points as Freddie himself rated. As an outcome of the intervention, his social competence with peers was increased by 3 points as Freddie himself rated. The mother reported the emotional int... 3 points as Freddie himself rated. As an outcome of the intervention, his social competence with peers was increased by 3 points as Freddie himself rated. The mother reported the emotional interventions and writing, and that he received outer intervention by family in social skills, in addition to teachers and students. The mother di...
by Freddie, who goes to his room to avoid raising his voice. Freddie reported that the lessons taught him to consider his feelings for his friends and to be more attentive to them when they are sad. The mother noted that a sense of calmness has become more prominent in him and his interactions with friends and family.

The above was individual analysis of the qualitative and quantitative data reported in tables 51 and 52.
7.7 - Summary of similarities

The cross-case analysis revealed many similarities. Both children are delayed in their social-emotional cognitive abilities, which also have an impact on their social skills and social interaction with others. Even with the similarities in these areas, though, each case has its individual characteristics, and personal home life and school life problems. The two cases have a similar family history in which both are the oldest children, live with parents, have siblings and have good relationships with their parents. In addition, both children have sibling rivalry, as reported by both parents and the children themselves. Both children received formal diagnosis but Oliver had an early diagnosis whereas Freddie was diagnosed just a year ago. It appears that the two cases had difficulties in comprehending emotions, and cannot read them, but each has his own difficulties in this area. Their response however is different, as the parents reported. Freddie does empathise with others when distressed but Oliver does not show such empathetic skills to others. The effect of these delays resulted in having communication difficulties, and again each one in his own way. Freddie, for example, does not seek interaction with others and finds it difficult to start a conversation, whilst Oliver tries to interact and does not have difficulties communicating. However, the quality of social communication led him to losing the interaction, with the result that both appear to spend most of their time lonely at school. Parents reported difficulties in interactions with their children at home. Oliver wants to play with his sister, but his behaviour towards her and the rigidity in following the rules affect the state of this interaction. Freddie appears more distant and prefers to play computer games by himself. Both parents agree with the lack of support they receive, whether it be from school or the mental health services - even though both children are at school action plus. Oliver receives more support than Freddie does, through a teaching assistant and a social programme. Their teachers agreed that they have high academic abilities and reading skills, and are well behaved. In general, the parents and teachers reported that there was impact of the children’s delay in social skills. The impact is overwhelming the parents, and often makes them worry about their children’s happiness at school.
The follow-up interviews were carried out two weeks after the intervention revealed positive improvement across the two cases. There was an improvement in the overall social interaction, where Oliver is observed at school to spend more time playing with others, and have a better ability to control his temper. Although Freddie’s teacher reported that he still spends playtime reading, he became more flexible in accepting the teacher’s instructions to interact and noticeable improvement was made in activities that require group work. His mother, on the other hand, noticed more improvement where Freddie started to request to be with other friends, and he was going out of the way to interact with his sister. The children reported that they both improved in recognising emotions of others, by using the skills and clues learned at sessions; also that they have to make an effort to maintain social interaction.

7.8 - Conclusion

The chapter gives a summary of the qualitative data collected for the two cases. It presents the data from each source, followed by a table that analyses similarities and differences between the two cases. It covers the home life and the school life area for each child. It presents the data in three ways. the First method analyses the children’s strengths, weaknesses, and their levels of social skills and emotional recognition before receiving the intervention programme. The second analyses these aspects after receiving the intervention programme. The last method presents the overall picture, where it combines data drawn from the first study, the quantitative study and the case study at both pre-test and post-test level. The next chapter will describe the data that has been analysed, and interpret the findings in order to contribute knowledge in relation to the overall research aims of this research. It will also describe the reasons for any changes in their skills, and suggest possible reasons for them. It will summarise the findings from the experimental study, and provide an overall evaluation of it, along with comparing these findings with those of other similar programmes.
Chapter 8 - Discussion and conclusion

8.1 - Introduction

This study evaluated a new intervention programme that aimed to enhance the emotional understanding of children with high-functioning autism and facilitate their social skills. The study investigated the effectiveness of cognitive emotional understanding training over a period of 5 weeks on promoting the children’s social interaction with both adults and their peers. Two types of investigations were carried out: one was through a quasi-experimental study measuring the children’s social skills, social competence with peers, emotional intelligence, and socio-emotional understanding. The second study was an in-depth case study analysis of 2 children’s home and school life, paying close attention to their social skills and emotional comprehension. What follow below is a summary of the findings from both studies and an evaluation of the intervention programme and its significance.

8.2 - Design of the programme

The intervention programme was designed on the basis of several theories. The cognitive theories of autism are the theory of mind (TOM), the weak central coherence (WCC) and the executive function theory (EF). In addition, the programme was also based on the theory of observational learning. As described in the literature review in chapter two, TOM is defined as the ability to understand other people’s mental states including thoughts, beliefs, emotions and desires (Baron-Cohen, 1995). A number of studies have shown that children with autism have difficulties understanding the mental states of others and that these difficulties affect their social and emotional development (Yirmiya et al. 1992, Baron-Cohen , 1999). Many researches have tried to teach children to mind read using different approaches such as computers, emotional recognitions through photos, false beliefs tasks (Baron-Cohen and Goodhart, 1994, Baron-Cohen et al., 2001). However, while all these studies have succeeded in teaching the children the targeted tasks; they have had difficulties in generalising these skills to untrained task or to maintain
changes over time. The current study focused on teaching the children the theory of mind concept by training to recognise emotional expressions and be able to produce emotions. It also supported generalisation by teaching the principles of recognising emotions by the following steps: 1- recognising through face features, body language and tone of voice. 2- Teaching simple emotions then gradually moving to more complex emotions. 3- Using other models of teaching such as acting and real life scenarios. 4- Varying the materials of teaching such as photos of real people and computer programmes. A difficulty that is associated with the deficit in TOM is the lack of empathy. By increasing the children’s ability to understand others feelings the programme encouraged the development of empathy. There were also activities in the intervention programme that teaches children to give more appropriate responses to other people’s feelings to show them empathy.

The second theory was the WCC. This theory posits that individuals with autism perform better in tasks requiring local processing and focusing more on details; as a result, they make less allowance for the wider context (Frith and Happe, 2006). The teaching programme was designed simple activities that can be taught in simple steps and use simple words. They were taught emotional understanding in a form of simple games that can enhance their social participation; likewise, there was simple modelling to develop the ability to relate different forms of information in their environment. The programme involved activities that require paying attention to detail such as face features, emotions and other small details; this will in turn help them to recognise emotions and their social context. Activities also presented simple and immediate social situations that could lead to an emotion, then gradually moving to challenges that are more complex.

The third theory that helped design the programme was the executive function. It is a crucial ability that is required for behaviour that does not follow a routine, or when a change of routine occurs. It is also an important skill for balancing more than one task simultaneously (Frith, 2003). Teaching according to this theory should be based on activities that involve certain goals, planning actions, and carrying out the plans successfully. The programme itself was designed, planned and piloted in advance. Children learned how to control the sources of their limitation in emotional understanding and practise active involvement to enable them to form a sequence of small steps that will help them formulate goals in their life in more general terms.
The final theory that was incorporated in the programme was cognitive social learning theory. The teaching provided the opportunities for children to learn through observing the correct emotional expressions and the best methods of empathising. Using modelling as part of the social learning theories was done through direct modelling from the researcher, video modelling and computer programme modelling. Another component of social learning theory that was used is the systematic reinforcement. In summary the aims for the intervention programme are:

- Teaching children with HFA to understand the meaning of emotions and to recognise them both in themselves and others;
- To link between the concept of emotions and social situations that could cause them;
- To understand that recognising emotions requires appropriate responses;
- Measuring the impact of social-emotional understanding on social skills and interaction.

The programme was evaluated after each session by an observer who recorded the children’s ability to learn the targeted skills. The responses from the observation showed that children were able to cope with the taught skills. In most the activities, children managed to respond correctly. The children received several prompts throughout the sessions but towards the last three sessions prompt were not used and higher rate of correct responds was seen. It also showed that verbal prompting was the most common prompt method used in the sessions followed by modelling. The observation also showed that the activities that require imagination from the children had the most prompting, as children with autism have poor imagination abilities particularly social imagination (Gould and Wing, 1979). However, these activities were repeated a few times (sub-activities) and with prompting delivered at the first attempt, children were able to improve and come up with social situations that led to emotions that were appropriate to the social situation scenarios. Another method of evaluating the intervention programme was through daily progress report done by the researcher. The reports showed active engagement from the children throughout the programme. It also showed appropriate level of interaction between the children and the researcher. Yet, two children had difficulties at the beginning of the sessions in accepting to
interact with each other. Such difficulties in interaction were expected in children with autism. Over time, there was progress in this aspect and the children were able to interact and cooperate with each other, and at sometimes they were one team. The report indicates that the planned activities were at an appropriate level for the children and the time chosen for each activity was sufficient. Using the progress report was a positive approach to aid the researcher to record any additional work required for the sessions. Very few points were added in the additional work and no additional activities were added. The result in each session was as expected; once children recognised simple emotions they then moved to recognising complex emotions. There was also an appropriate level in performing emotion recognising in the computer based and the DVD training. In addition, children produced positive responses in activities that required them to match pictures of emotional expressions. Activities that taught recognising emotions through body language and tone of voices resulted in correct responses indicating that children were able to pay attention to these principles in order to promote emotional recognition. The multi model approach used in the sessions was effective in the sense that the children were interested in each activity. Also the variety and types of activities allowed the children to relate emotions to situations in activities such as career emotions and interview.

8.3 - Experimental study - findings and limitations

The researcher has developed an experimental cognitive behavioural training programme especially for this study. The goals of the programme were (1) To enhance their ability to understand emotions of oneself and other (2) To enhance their social interaction skills, (3) To improve their ability to generalize the new skills they have learnt, and (4) To identify the relationship between the intervention programme as a cause and children’s outcomes as the effects. Two equations were proposed for this research; RQ1: Will an intervention programme, based on appropriate theory and research, help children with HFA to understand social-emotions, and improve their related social skills? RQ2. Will such an intervention help
children with HFA initiate positive social interaction and promote their emotional understanding and emotional behaviour.

The results show that the intervention programme was associated with the children in the experimental group to improve in their social and emotional understanding, as well as in their social interaction. Furthermore, improvement was seen across all the variables measured from time one, prior to the intervention, to time two after the intervention. At time one, children in both the experimental group and control group confirmed the characteristics associated with autism of having a deficit in emotional understanding (Baron-Cohen, 1995 and Kasari, 2001) and social interaction (Volkmar, 1997 and Beadle-Brown, 2002). Prior to the intervention, both the control and experimental groups had similar social skills, according to the parents and were two standard deviations below the population’s mean of typical development in children, as presented by Spence (1995). The teachers of the children reported similar social skills as well for both groups, and were more than 2.9 standard deviations below Spence’s mean for typical developmental children, whereas the children’s social skills in the experimental group was slightly different as compared to the control group; both were between 1.4 and 0.5 standard deviations below Spence’s mean of 47.64, SD=3.7. The children presented low social skills as assessed by the parents, teachers and pupil’s perspectives. Similar findings were seen in the social competence with peers for both groups, as reported by parents, teachers and pupils, and were between 2.3 and 3 standard deviations below the norm of typical development in children (based on Spence, 1995). As expected in the methodology chapter, the children scored themselves higher than the parents and teachers at the starting time, which replicates the findings of Spence’s study (1995). Another study used Spence’s two questionnaires with parents and pupils with autism, where parents reported a lower level of social skills and social competence than their children did (Knott et al., 2006).

Another aspect analysed in this study was emotional intelligence. There are similarities in all the subscales of emotional intelligence (interpersonal, intrapersonal, adaptability, stress management, and
positive impression) between the control and the experimental group demonstrating low levels of emotional intelligence, according to the standard mean of EQi;YV (Baron. 2000). The only exception was that children in the control group scored near-average levels in the stress management; this finding agrees with the many studies, reviewed in the literature, which states that children with autism have a low ability to recognise and understand emotions. (e.g., Baumengar and Kasari, 2000).

The final aspect that was analysed was the social-emotional checklist, as devised by the researcher. At time one, the children had a similar level of social and emotional understanding, and were mostly below the median of the total score.

This section will explain the difference in results at time two across the experimental and control groups, as well as across the parents, teachers and children. Children in the experimental group had a significantly higher level of social skills than children from the control group, as testified by parents, teachers and children. It was found that teachers observed the highest change in social skills, in comparison to the parents and children. The improvement in social skills that is seen at home - as parents reported - and at school - as teachers reported - suggested that the children were able to generalise the emotional understanding skills learned in the experimental setting to their daily lives. The findings confirm the hypothesis that cognitive behavioural intervention designed to enhance social-emotional understanding could help children with high-functioning autism to improve their social skills. The items in the social skills questionnaire tested the children’s social manners, social behaviour, warmth and empathy, temper management and social achievement. Increases in results at the post-test stage suggest that these skills have been enhanced. It also suggested that the children were able to use the knowledge learned in the sessions in their understanding of others’ emotions, linking emotions to social situations, dealing with negative emotions and empathising with others. They were also able to apply all this knowledge to their real-life settings. This study replicates the improvement seen in a small sample study of five children with autism who were trained using a social skills training programme (Ozonof and Miller, 1995). In addition
to teaching the five boys about social interaction and conversation, the Ozonoff and Miller study added teaching the TOM through a false-belief task. Their results show an after the intervention improvement in the children’s ability to perform theory of mind tasks, but the improvement was not generalised when the impact of intervention was measured by the parents and teachers. Perhaps passing false-belief tasks is not enough for the children’s emotional understanding to improve. It is this limitation that is seen in similar interventions which underlies why this study aimed to avoid such TOM tasks. Despite the Ozonof and Miller’s study limitation, the improvement seen in the children’s social skills establish a relationship between their intervention as a cause and the improvement as an effect of their training programme. The literature review in this study (chapter two) has illustrated that the delay in the children’s ability in emotional understanding can lead to a delay in their social skills (Baron-Cohen, 1995, Frith, 2003 and Atwood, 2003). Baron- Cohen(1995) and Hadwin et al (1996) argued that children with ASD have a deficit in TOM in terms of recognising and understanding emotions and perspective talking and these deficits prevent them from developing reciprocal interaction, which is the core of any social interaction.

Results also show that children reported their abilities to be significantly lower than parents and teachers, yet still higher than the pre-test level. This finding is consistent with other researchers who discussed personal characteristic bias. Researchers have found that younger children tend to exaggerate their good, or underestimate their negative behaviour (Cook and Campbell, 1979; Kassel and Zimmerman, 1993). On the other hand, the control group did not show any improvement in their social skills across all three variables; some control children’s social skills levels even decreased.

The intervention programme did not lead the children to have social skills at a level similar to the typical developmental group, presented in Spence’s (1995) study, but certainly it brought them closer to the mean level of social skills. There may be other factors that are considered limitations to further improvement of the children’s performance; these will be explained at the end of this section.
This study investigated the social skills generalisation further, by measuring social competence with peers. Findings in this study reveal that children improved in their social competence with peers (reported to a similar level by parents, teachers and children). These findings agree with the programme hypothesis that such cognitive intervention programmes, designed to strengthen emotional-social understanding, could help children diagnosed with HFA in initiating positive social interaction, and promote their emotional understanding as well as their emotional behaviour. The social competence with peers section tested items that look at the children’s relationships with their peers. As reviewed in the literature, the delay in emotional comprehension leads to a delay in social interaction and as a result, a delay in friendship - or lack of it (Bauminger et. al, 2003, Bauminger and Kasari, 2000). Practising recognition of emotions of others and learning to have affectionate responses to close friends and family in the intervention programme enhanced the children’s peer relationships. Particular items which increased were having more than one friend, and having more stable relationships. Despite this improvement, the children in the experimental group were significantly below the level of the typical developmental children in Spence’s study (1995). Other studies suggested that, in order to enhance social skills, particularly interactions with peers, the use of typical-developmental peers in the intervention would give better outcomes (Roeyers, 1996 and Kamps, 2002). However, the Royers study did not improve the children’s ability to initiate an interaction and in Kamps’ intervention, the children were not able to generalise their interaction to non-trained peers. The outcomes measured in the current study, suggest that social interaction was improved in different environments according to parents’, teachers’ and children’s reports.

Even more positive results were seen in the Emotional Quotient inventory. The children in the experimental group improved in total emotional intelligence, reaching the average range of typical-development children. According to the interpretation guidelines of the test, average means that the children are of an adequate emotional and social capacity. A bigger improvement was seen in the children’s intrapersonal skills, where they reached the average level. The items in this subscale of the
EQi; YV tested the children’s abilities to recognise their own feelings and to express how they feel in an appropriate manner. Activities in the intervention programme - like learning the definitions of simple and complex emotions, acting emotions, learning different levels of emotions through the emotions thermometer game, writing an emotions journal and learning the different emotions through situations - all supported the children in improving their emotional self-awareness. Children from the control group did not improve in their intrapersonal skills and even showed a slight decrease. Another difference in the emotional intelligence between the two groups, was in the interpersonal skills - another sub-scale of the EQi; YV. Children from the experimental group improved in their ability to understand the emotions and appreciate the feelings of others. All the activities in the intervention programme were designed to enhance the children’s ability to recognise feelings of others - whether through facial expression, tone of voice or body language. The same could be said of the activities that generate empathic skills, like real-life scenarios, the caring attitude games and problem-solving games. On the other hand, the children from the control group did not improve in their interpersonal skills. As expected, the sessions improved the children’s management of their negative feelings, which could be seen in the average level of stress management. Although the experimental group was noticeably lower than the control group at time one in this sub-scale, the intervention taught the children of the experimental group to be calm and respond to events without an emotional outburst. Children with autism are characterised as being resistant to change (Rutter, 1978 and Wing, 1981) and that leads them to have problems dealing with unexpected events and have difficulties solving problems. The intervention programme helped the children to improve their adaptability skills. The items in this sub-scale measure the children’s ability to be flexible and realistic in managing change. It also tested their abilities to find positive ways of dealing with daily problems. The intervention contained activities that taught these skills - such as guess the feelings according to the situation, the problem-solving game, and the best behaviour award. By contrast, children from the control group did not show any improvement.
The EQi; YV included assessment of the children’s impression. The children showed less improvement in the positive impression, a scale that was designed to identify individuals who might attempt to create an exaggerated positive impression of themselves. This result suggests that they were attempting to present themselves in a negative light. One explanation of these findings was discussed previously in this chapter; children tend to exaggerate their good behaviour, or underestimate their negative behaviour (Cook and Campbell, 1979, Kassel and Zimmerman, 1993). The children in this study generally gave a positive impression about themselves. In general, EQ results in this study emphasised that emotions can be taught and that social understanding and interaction can be improved as an outcome of training. In a related study, Hadwin et al. (1996) taught children with autism to understand emotions, beliefs and pretence. After the intervention the children were able to learn simple tasks and move to more complex tasks, however there was no improvement in these skills outside of the teaching area. Furthermore, it was not clear if the children improved their social skills (Hadwin et al., 1996). Their results encouraged my research to teach children with autism emotional comprehension, with the addition of measuring the change in social skills. The findings in the emotional/social checklist correlate with the EQi; YV and Spence’s (1996) questionnaire findings. The children in the intervention group showed development in overall social and emotional understanding and generated better social interaction. On the other hand, children from the control group did not improve in these areas. Not only were the children in the experimental group able to recognise complex emotions, but also improvements were seen in the children’s social bonding with others - as well as their social initiation. Another important step in social cognition was established when examining the checklist statements - such as understanding sarcasm, jokes and caution in interacting with strangers. This indicates improvements in understanding others’ intentions.

One study that has similar encouraging results of learning social and emotional understanding and equally promising generalisation skills was the Bauminger et al. study (2002). Their study taught children with high-functioning autism in an intervention programme that enhanced the social cognitive capability,
including emotional understanding and problem-solving, as well as practising social behaviour and interaction with peers. The intervention programme used all the social agents close to the child in the training. Teachers trained the children in-class, and the children’s peers were trained to participate, along with the parents’ involvement. Their results showed improvements in all the areas they were taught; additionally there was an increase in the children’s interactions with peers. However, it was not clear which part of the intervention programme improved the children’s social interaction, as the teaching focused on different areas of social life. Therefore, the present study focused on one area of social cognitive that is related to emotional understanding and delivered it to a small group of high-functioning autistic children. It also differs from Bauminger study by adding the control group in the design to give a stronger design. The fact that the children’s social skills increased, and that their social interaction with peers also developed after the intervention, indicates that perhaps teaching the children the social emotional cognitive ability could be a successful approach to be taken into consideration when planning to support children with autism.

Even though the intervention programme was relatively brief, significant changes occurred in specific areas afterwards. In particular, the training in emotional recognition and teaching empathy did help the experimental group’s children to gain social skills and improve their social interaction with their family and friends - as the parents reported. Furthermore, teachers reported an increase in social skills and interactions with peers at school. Another explanation of the effect of the intervention programme on generalisation could be due to the fact that the teaching was through group training, which may give opportunities for real-life examples to arise. Also during teaching the activities, the researcher gave examples and scenarios - from real-life events - to the children. Another aspect of the teaching that could aid the children is the variety of activities. The researcher followed the multi-model approach, in which different ways of teaching (including acting, role play, modelling, direct teaching, and using a variety of materials such as board games, art, and DVDs) could increase the chance of development.
8.4 - Issues with experimental design and factors that might influenced the findings

Since the children from the experimental group have similar levels of social skills and social competence to the control group, we can assume that any improvement found at time two in these skills could be due to the intervention programme. There are also similarities in the emotional intelligence and the social emotional level between the children from both groups; any improvement in the experimental group found in time, too, could be due to the intervention programme.

However, there are other considerations which should be taken into account when evaluating the improvement of the children’s social-emotional interaction. One is that the study was conducted on a small sample of six children; the researcher relied on comparing mean scores without using statistical testing. Several factors made it difficult to have a large sample. One is that this study focused on children of high-functioning autism, and there is a low incidence of these children in ‘ordinary’ schools. Despite considerable contact with various schools and agencies as mentioned in the methodology chapter, the researcher only received a reply from a small group of parents. Also, the design of the study required two groups: an intervention and a non-intervention group. Another factor was the nature of the intervention group, and the intensity of the sessions required - in that the teaching was carried out in one small group, and administered by the researcher. Future administration of the intervention programme with a larger group where statistical results could be obtained could confirm the effectiveness of the intervention programme. Another limitation of this programme is that not all the improvement seen in the measures led the children to reach a typical-development level. Only the EQi;YV test showed an average level of emotional intelligence, but the SSQ and SCQ score did not reach the mean of Spence’s (1995) population of typical-development peers. Had the intervention been conducted over a period of longer than 5 weeks and of more than 10 sessions, better improvement might have been seen. Bauminger, for instance, conducted the intervention over 7 months, which gave the programme convincing outcomes in the overall social cognitive abilities (Bauminger, 2002). Ozonoff and Miller, on the other hand, conducted 14
sessions of social cognitive intervention - which is four sessions more than this study - but they spread the sessions over four months, rather than squeezing them into five weeks (Ozonoff and Miller, 1995). I believe that if this intervention programme was less frequent, and spread over 3 to 4 months, it might have had better outcomes.

An issue that must be addressed in interpreting the result of this study is regarding the researcher bias. It could be argued that the researcher designing, teaching and evaluating the intervention programme might have been bias for knowing the aims of the intervention programme. However, possible biased was controlled as much as possible through reliability checks as mentioned in the methodology chapter (chapter three). For example, it was minimized by using equivalent forms of data collection with assessments tools in the quantitative methodology as well as conducting case study.

This study used the social-emotional checklist to give an overall picture of the children’s social-emotional cognitive abilities, as well as their social interaction. Even though the children in the experimental group show significant progress in these areas, one cannot rely on this test, since it lacks formal validation. Replicating the study using other standardised measures would give a clear indication of the effect of such intervention, as well as follow-up measures, after a period of time. Although the period between the pre- and post-test was approximately three months, long-term measures would test if the developed skills are enduring. The control group received the same intervention programme after collecting the data at post-test level. The three children from the control group were taught 10 sessions in one group over six weeks.

As established in the literature review (chapter two), intervention based on teaching TOM or emotional recognition to children resulted in some degree of an improvement of social skills, and could even be seen in the children’s interaction with others (Leaf, 2009; Bauminger, 2003; Downs, 2004). This leads to a relationship between social-emotional understanding as a causal influence, and social skills as an effect. However, the argument depends on whether teaching emotional recognition is adequate to improve social skills. According to the previous studies reviewed, there are issues that obstruct this relationship. First
there is the issue of other factors presented in the study that eliminate a simple relationship between emotional understanding and social interaction. In Bauminger, for instance (2003), the intervention programme led to significant improvement in the ASD children’s social interaction, but there was involvement of other agents in the teaching that made the effect of the intervention by itself lost. Secondly, there is the issue of passing TOM tasks in emotion recognition that did not necessarily lead to generalising these skills into the actual social world. Those two issues above could interfere with the assumed causal relationship in the current study, and were thus avoided in this intervention programme design. In summary; (1) this programme is designed to teach all four emotional aspects (recognition, understanding, expression and responding) with the emphasis on teaching empathy as a desired social response; (2) the teaching used multiple teaching techniques such as modelling, reinforcement and others reported in chapter four; (3) methods were used to encourage generalisation, such as using real life situations; (4) no other agents beside the children themselves were engaged in the teaching, to test the effect of the teaching only.

With the above in mind, the correlation in this research between the children’s findings with those of teachers and parents was low. Children did show improvement in their social skills and competence according to their reports, but when compared with parents’ and teachers’ reports, they did not reach their level. Although this issue may be attributed - as mentioned above - to the characteristics of children, nevertheless this does affect the relationship intended between the intervention programme as a cause of the improvement in social skills and interaction.

Downs et al (2004) concluded in their study that it is easier to teach children with autism the TOM aspects than to teach them social behaviour. In their study, there was some relationship between social-cognitive (i.e., emotional) understanding and social behaviour, such as cooperative engagement. Yet the children with autism in their sample continued to have ‘residual deficits in visually processing others’ faces’, which, in their opinion, would continue to affect social behaviour. Nevertheless, the current study
did also establish some link between recognising the emotions of others and enhancing social skills and social interaction.

As previously stated in the methodology chapter (chapter three) the current study was designed to put into consideration as many possible threats to the study’s validity as possible in the circumstances; it aimed to avoid all possible explanations as to the effect of the result. It is not possible to rule out all factors that could cause threats to the research, however the use of the control group in this study definitely eliminated some of these threats. Both groups - experimental and control - were compatible in their biographical information to begin with. They were also at a similar level in their social skills and emotional understanding, as the pre-test findings showed. Another factor avoided was that none of the children in the sample group had undergone a similar intervention. This data was obtained (as mentioned in the methodology chapter) prior to sample selection.

The significant changes occurred in specific areas, at post-test in particular, in gaining social skills and improving social interaction with family and friends, as the parents reported. Moreover, teachers reported an increase in social skills and interactions with peers at school; this is likely to have been caused by the intervention programme that taught emotional recognition, understanding, expression and responding. Another explanation of the effect of the intervention programme on generalisation could be due to the fact that the teaching was through group training.

8.5 - Case study findings and limitations

The findings of the case study also revealed the positive development of the children with high-functioning autism, when they received the intervention programme. There was agreement between the parents and teachers on the post–study questionnaire, revealing that the children had improved in their abilities to understand and express emotions, as well as showing a marked improvement in their social
interaction. Before the intervention, parents and teachers gave descriptions of the children’s understandings of others’ emotions, their empathic skills, their social competence and their social interaction. These were consistent with the main clinical features of high-functioning autism (Attwood, 1998; Volkmar et al, 2005). First of all, the children’s developmental milestones did show that both children developed at a normal level but this questionnaire was originally designed to detect any early signs of autism. As reviewed in the second chapter, there are early signs that could assist the diagnosis of autism (Volkmar et al, 2005; APA, 2000). Therefore, the parents’ concern about their children’s development revealed some minor signs. One parent reported that her child had problems with his temper; he would hit his head against the wall, and the other reported that he did not know the boundaries of behaviour. It is important to remember that those children are in the higher-functioning range, where the diagnosis mostly started at school age, yet the parents still reported early signs. Secondly, the interview questions that are related to describing the children's behaviour and functioning gave the chance for parents to describe their children's specific problems. From the collected themes, the characteristics of autism were revealed. Both children were similar in following the routine category and reacted in a confused and upset manner to change. This is one side of the triad of impairments, described by Wing’s diagnostic criteria (1981). The other side of the impairment is the social skills and communication - and the two cases did present delay in these areas, but the parents’ and teachers’ description were different from each other which represents the uniqueness of behaviour known in children with autism. As it is a spectrum, one child could be at one end, while another child is at the other end, yet all are labelled under one umbrella. One child in this study was presented in the social communication category as having difficulties initiating interaction, according to his mother’s and teacher’s statements, while the other child was uncomfortable in groups and preferred to be alone. There was consistency among parents, teachers and the children on characteristic of autism as well.

Another key theme that brought expected results is the parents’ reaction to the diagnosis, and how they shared this information with family and friends. Certainly, such information made both mothers feeling
‘devastated’. Such a reaction is common in parents of children with special needs (Turnbull, 1990). Parents go through so-called grief stages from the minute they receive the diagnosis; these continue throughout the child’s growth. Fortunately, the grief improves, eventually to an acceptance of the child and the parents adapt to his/her needs. In this study, one child was diagnosed a year ago while the other four and a half years ago. The key themes of the diagnosis revealed different responses between parents. The child who was diagnosed at an older age (ten) had more difficulties in social interaction and fewer friends than the child who was diagnosed at the age of six. Also, the first child’s mother showed more signs of distress and was more worried about her son’s moving to high school and his wellbeing in general. Another important issue is that the earlier the child is diagnosed, the more knowledge the parents receive. For the child who received diagnosis at an early age, his mother was more aware of the SEN services and more involved in her son’s school - such as in changing the bullying policies and knowledge of how to get statement. The other mother reported that she only knew now that, in order to get more support, she needed her son to get a SEN statement. It was not possible to know these aspects of these children’s life and experience by conducting the quantitative method by itself. In the same area, the parents of child who was diagnosed earlier were more open about their son’s condition and shared his needs with friends and family, while the other mother did not share this information with anyone except her husband. Perhaps she is still in the denial stage; when parents accept that their child has special needs then they would share this with other people (Turnbull, 1990). The final issue in this aspect is the teachers’ role in the diagnosis. Both parents reported that it was the teacher who pinpointed the child’s developmental delay. As both of the children are at a higher level on the spectrum, the concerns normally appear when the child begins school in nursery and teachers start comparing the child with autism to his peers. These findings about the parents are consistent with the finding of the children’s diagnosis report.

A key theme that is related to the purpose of the current study is emotional understanding. The results from the three themes - recognising emotions, expression emotions and responding to emotions of others - presented that the two children lacked the capacity to interpret emotions; they were described as being
able to recognise the basic emotions, but had difficulties with the more complex ones that are associated with more complicated social situations. The literature provides extensive evidence that children with autism have difficulties recognising simple and complex emotions (Sigman, 1997 and Kasseri, 2001). However, they experience difficulties in explaining the causes of simple and complex emotions, and in understanding more complicated emotions - e.g., embarrassment, guilt, and pride (Kasseri, 2001). The parents in the current case study gave similar responses to their children’s ability to express their emotions. Mothers were able to observe happy, sad and anger emotions only, but did not observe other complex emotions. Both mothers added that their children exaggerated emotions especially anger. Their ability to recognise other people’s negative emotions such as sad or hurt were both what is expected from children with autism, that is difficulties to recognise other people’s feelings. However, one mother added that her son was able to recognise when she is sad and empathise with her. Perhaps this is down to her exaggerating emotions to make them easy to read for him. The findings from teachers were similar to parents’ responses, as they reported that both children have difficulties expressing emotions and interpreting peers’ emotions. As one teacher stated, that the child confuses tone of voice when peers respond with sarcasm or complement, as well as not recognising the complement from the teacher. The other teacher, on the other hand, explained that the child’s emotional response could be over-dramatic and the child could respond inappropriately to peers when sad or hurt.

This, in return, affected the boys’ abilities to interpret people’s behaviour, as reported by both parents. The children tried to give false information as to their level of recognising emotions, by stating that they are sometimes able to recognise feelings, but when they were asked to give examples, they gave limited ones. One child stated, “I can tell when my mother is sad”. He was not able to give other examples of complex emotions, confirming their deficiency in understanding this level of emotions. One result of this delay in understating emotions in children with autism is the deficit in empathy. Researchers have questioned whether children with autism lack the ability to empathise with others, and if they did, is it possible to teach them (e.g., Baron-Cohen et al., 1985). The present study gave both similar and different
findings. In relation to ‘responding to other people’s negative emotions such as sad or angry’, while Oliver did not ‘sympathise with others when sad or upset’, as the mother reported, Freddie did ‘sympathise with others’ negative emotions’. Another question resulting from Oliver was ‘how many negative emotions can he recognise?’ This was revealed by the mother, describing his difficulties in recognising his peers’ emotions. Another conflicting report about Oliver was that he reasoned not expressing his feelings to his parents to avoid upsetting them. With this in mind, when empathy was examined further, the children revealed different perspective in emotional recognition. Oliver for instance did not give responses to what actions or words he would use to comfort his mother when sad or upset despite his previous statement that he does not want to upset them while Freddie gave statement of actions and words to comfort his mother.

The qualitative analysis reflected on the question of whether children with autism can learn or improve empathy. After the intervention, the child who does not ‘sympathise with others when sad or upset’ became aware of his sister’s feelings, and he was reported to have changed his actions accordingly. In addition, both children stated that the lesson helped them to recognise their schoolmates’ feelings, and that when someone feels sad or hurt they are able to identify that and offer their support. Teaching them to recognise the emotions of others might help them to learn the mental states of others or, as described by Frith, to ‘mentalise’ (Frith, 2003). Frith and other researchers - such as Downs et al, 2004 and Hadwin, 2000 - linked between emotional recognition and understanding which in return is linked to social behaviours, as stated by the same researchers. What these two boys learned is to recognise emotions in all aspects; that is recognising facial expression, tone of voice and body language. In addition, learning to understand causes to emotions, social cues and appropriate expression. It is likely that the improvement seen in these children after the intervention is the result of the intervention itself.

This research stated the hypothesis that cognitive behavioural intervention designed to enhance social-emotional understanding could help children with high-functioning autism to improve their social skills
and interaction. The follow-up investigation in the case studies revealed noticeable improvement in the children’s levels of emotional understanding and social interaction with their family members and their peers in school. At time one (prior to the intervention) both children showed a delay in their social interaction. Both parents reported a lack of interaction with others, and when the interaction was there, it was non-reciprocal interaction between the child and his friends or siblings. Themes like starting a conversation, relationship with peers, seeking friends, ability to interact and maintaining interaction all presented deficits. In addition to the correlation between parents’ and teachers’ reports, teachers reported that one child does not want to interact with others and that all his interaction is the effort of the teacher. The other teacher reported that other children avoided interaction with him.

Parents reported that their deficit in understanding others’ emotions - along with other characteristics associated with autism, such as resistance to change - had a great impact on their children’s interaction. Teachers shared their observation of the children being alone most of the time. Teachers, however, had a different opinion about the level of delay. One child was reported by the teacher to have problems initiating a conversation, whereas the other was reported as not having difficulties initiating a conversation. Even the child with no difficulties spent most of his time at school alone, as other children found it difficult to cope with his behaviour. It is this problem that the researchers in the field have been investigating recently, to measure the level of desire and the effort the children must make to have social bonding. An interesting study was done by Downs and Smith (2004) to examine the children’s social cooperation, emotional understating and social behaviour in three groups of children (high-function autism, typical development children and children with social problems, other than autism - such as ADHD). The children in the autism group scored better in the overall social emotional understanding, compared to children with ADHD, and showed a similar level to that of typical development children. However, children with autism presented odd patterns of social behaviour and cooperation, as reported by their parents. Although the children with autism performed to the same level as the non-clinical group in the emotional understanding test, they had difficulties passing the same task when emotional expression
was tested using schematic drawing. Downs and Smith explained that the children with autism had been tested just after completing the intervention programme, which explains their results in social emotional understanding and social cooperation. However, the study did not explain what type of social skills training the children received. It is highly possible that they were not taught the specific social emotional cognitive skills that are taught in the present study, and that is why the children with autism in Downs and Smith’s study performed at a lower level in the emotional recognition from facial expression test. The parents in this study did not describe the social patterns for their children, but the development revealed after the intervention (in terms of the social interaction and emotional bonding with their siblings and peers) indicates that they may have developed an appropriate level of social skills. One parent described the improvement in her son, in these terms: he started to ‘cope with his sister and play with her’. This child had stated before the intervention that he had nothing in common with his sister, but after the intervention, the mother stated that he taught his sister to play a computer game, and that they had started to play together. This change in his attitude is a method he chose to solve his problems with his sister.

Another improvement noted from the case study is the children’s attitude towards friendship. Parents saw more interest in their children to meet friends to the degree that one child asked his mother to invite friends when he used to refuse spending time with friends. In addition parents reported an increase in interaction with friends and spending more time with the family. One mother reported that - although her son still prefers to spend his time on the computer - he is spending more time out of his room and playing games with his sister. Another mother reported that she started seeing her son speaking with friends in school.

As stated in the discussion of the experimental study, the short period of the intervention is considered a limitation for further generalisation. With a longer intervention, it is possible that this boy would apply these mediation methods learned in the intervention to his school setting. His teacher, on the other hand, stated that there was not an improvement in him starting social interaction, but there was much more
acceptance of initiations by his teacher or peers. Both children increased the amount of time they spent with other people, whether at home or at school, and both were showing more desire to socialise. Another interesting improvement was seen in the children’s behaviour; they have more control over their negative feelings, and better ways of expressing them. Both parents reported that their children improved control of their anger, and found other ways to suppress it. Unlike most of the studies that focus on the recognition of emotions in autism, this study taught the children to express their emotions using various facial expressions, body language and tone of voice. Children with autism have limited facial expression and body language, and are often described as having a monotonous voice (Frith, 2003; Volkmar et al., 2005). The parents and teachers in this study gave similar descriptions of the children’s ways of expressing their emotions. Furthermore, they all show their negative emotions by exaggerating their expressions. The sessions included methods of helping the children to learn these skills through modelling and observing themselves and others, with the help of tools such as the mirror and camera.

One major goal when choosing a qualitative study is to evolve new data that were not in the study hypothesis. The finding from the case study gave three important findings: (1) parents’ emotional states and stress; (2) lack of support and service for children with autism; (3) lack of training and experience of the teachers. Several themes that were obtained from parents and teachers reveal the above findings. Examples of the themes relating to parents include: opportunity to express concerns, support the child receives, level of support, contact with mental health and type of intervention. Other examples of teachers’ themes were: IEP for child, understanding and knowledge about autism, role of teacher assistant and strategies used with the child. The paragraphs below explain these in more detail.

The parents freely expressed and shared their experience, to a degree that the researcher rarely used the prompting questions prepared for the interview. The study gives much evidence of the parents’ emotional states towards their children’s difficulties, and reveals their opinion about the available support their children receive. Both parents reported being distressed about their children’s difficulties and confused
about high school placement. In addition, both parents did not report any intervention that their children could benefit from to improve their social interaction. Teachers agreed that none of the children received a social skills programme. A recent report on the special education provision concludes that there is a gap between policies and practice (Wilkinson and Twist, 2010). Although the provision in the UK is aiming for inclusion for children with special needs, the question remains, ‘how much inclusion can children with high-function autism receive, and how much effort is made to make the schools the best inclusion environment?’ The Wilkinson and Twist report was in line with the view that children with autism are placed in a mainstream setting, but this does not necessarily mean that they are included. The teaching in all schools depends on the child’s ability to understand the spoken language and the social behaviour taught in the lesson. Since children with autism - particularly high-functioning autism – have high intellectual functioning and are verbally able, most parents and educational authorities consider a mainstream school as the best environment. The present study revealed a point of view that is consistent with this report. Although both children were formally diagnosed with Asperger’s syndrome or high-functioning autism, and in spite of the time since the diagnosis was done, none of the children had ever received any type of social intervention programme, according to parents and teachers. One mother and teacher reported that the child was receiving a social skills programme, but the approach used did not teach the child to overcome the deficits specific to autism. The evidence is that his social-emotional cognition and social interaction was low, but then improved after the intervention programme. This case raises the question of whether inclusion is the right method in educating children with autism. Placing the children in the study in an inclusion setting presents problems associated with their difficulties, questioning the appropriateness of the placement. There is a historical debate about the problems between inclusion and exclusion of children with special needs. There is a political, psychological and educational tension in this conflict (Norwich, 2008), and Norwich discusses the disagreement about the right placement of a student with special needs. The factor that increased this problem is that in the educational field, there is not a clear perspective about inclusion that could resolve the tensions. It could be that there
is more than one method of inclusion that would benefit SEN children. For that reason, it is essential to look at inclusion from a universal point of view where it clearly includes all children - whether or not they are diagnosed with special needs. This issue arises from the findings in this study. Although, as stated, both children are placed in a mainstream school, the problem in my opinion comes from the inclusion method used in their schools and what support is available. It is clear that the method leads the children to be excluded from interaction with other children. As reported by parents and teachers in the study, both children spend their time alone where they are not approached by others. It is clear that these children were not taught with skills and strategies that could help them to integrate.

The parents have reported that they believed that their children’s difficulties were aggravated by the lack of intervention at school. Both parents agreed that the level of support their children receive was not sufficient. They also noted the poor services provided through the mental health services; both parents admitted to receiving one occupational therapy session, then their children’s file was closed and no further services were provided. This affects the parents’ feelings and increases their concerns over their children’s life at school. Both parents were concerned about their children moving to high school, where they have less access to progress reports.

When analysing the teachers’ responses, the lack of experience and training became clear. Here are some examples: one teacher stated that the child did not have an IEP plan, despite the fact that he was at school education plus in the SEN system. Both teachers reported that they have knowledge about autism and understand the child’s needs, yet they did not report any professional work or methods that were used with the children. One teacher reported using a secret card gesture to remind the child of starting task. Although the teacher stated that it was helpful, it is not considered an approach that could be used with other problems the child has. Data about the teachers’ training and courses they took were not collected; this reveals that the staff in the children’s school did not undertake the appropriate training required for children with ASD. Ravet (2013) analysed the benefit of a training programme aiming at
teaching staff about autism, approaches and interventions that help children to cope with social and educational life. She summarized four main factors that could affect training in such programmes: (1) the programme content might not cover all related subjects to autism yet it is difficult to design one programme that will suit all teachers. This could be a point for future research to address the real needs of staff and include them in training programmes; (2) teachers who attend specialised programme may not have the time to practice the knowledge they learned in real life; (3) when inclusion policies are conducted, it is possible that some staff have a “negative attitude” towards inclusion as an approach; (4) lack of government funding. A survey done through NAS reveals that teachers in the UK are not required to have any autism training, yet 1 in 110 children have autism (NAS, 2006). For that reason, the survey gave recommendation to include professional training for all teachers and ensure that the SEN teachers in particular have the appropriate qualifications.

Additionally, it appears that not all parents have enough information regarding the level of intervention for special education, and the choices on offer. One mother reported that she only recently learned through her own actions about statements of SEN, and that they might be able to provide her child with further services. It should be noted that both parents are applying to receive more services, and want to get their children a statement in order to gain more support. This highlighted another gap in the field regarding parents’ training. Research has established the importance of parent training in promoting the children’s skills and learning (Ingessoll and Dvortcsak, 2006). In fact, many interventions are based on the involvement of parents. The NAS and the local NHS offer training courses for parents but it is not clear as to how are they applied and the content of the courses. One parent in the study reported attending one course that was recommended after receiving the diagnosis, but it was this parent also who reported her lack of awareness of the support available.

The study cannot be generalised to represent the view of all parents, but it certainly is in accordance with other studies that reported the lack of efforts in mainstream school to provide proper inclusion (Wilkinson
and Twist, 2010), and gives some evidence of the effect of a social and emotional programme on children with high-functioning autism. To further understand this issue, a report was produced by the Autism Organisation to analyse a survey for parents who were members of the NAS (Batten et al, 2006). The findings disclose a result in line with the current study. The report highlighted the following results: (1) 43% of parents reported that it took the school more than a year to receive the support outlined in the child’s report, and that even when the support was introduced, 75% of parents said that it was not available to their children; (2) only 35% of parents are satisfied with the level of understanding of autism within the school; and (3) 46% of parents feel that their children are not in the kind of school that would best suit them, and that there is a lack of information about the choices available. The report concluded that the good practice of the policies is available, but the schools need to follow approaches that include children with autism “so that the good practice can become standard practice in all schools” (Batten et al, 2006).

The researcher conducted a follow-up interview that focused on measuring the outcomes of intervention. However, the follow-up interviews did not reveal all the findings found from the first interviews. Other ways of investigation could give better evidence of the change resulting from the intervention programme. Methods such as observing the child’s interaction at home and school could be more accurate than relying on asking family members. It is true that the assessment tools did support the evidence of the case study, but what was revealed from the interviews - such as the sibling relations and ways of dealing with anger - would give another viewpoint if observed, and this would avoid researcher bias associated with case studies (Flyvbjerg, 2006). Another way of repeating this case study as suggested by Flyvbjerg (2006) is by using larger number of case studies that adopted consistent investigation methods, as used in these case studies.

8.6 - Integrating findings and implications of both studies
The results from the experimental study gave evidence of positive change within the specific variables that were tested in the children with high-functioning autism. It showed improvement in social skills, in their social relationships with peers, in their emotional intelligence and in their social-emotional understanding. The case study gave detailed examples of these improvements in specific terms and contexts. The case study also confirmed the positive outcome of the intervention programme. The two methods of evaluation complemented each other.

For example, the EQi;YV tested the children’s adaptability skills - that is, their ability to be flexible and be realistic in managing change. The score was low then improved after the intervention, but the case study gave more explanation. One mother explained that her son did not like change, needed warning in advance, and did not like to integrate school friends with family; that is why he did not invite them to visit. The case study for this child revealed how he gained adaptability skills and started to request his mother to invite school friends home, and the teacher reported that this child began to accept instructions to interact with others. As expected, the improvement in the children after the intervention programme was accurate.

The two methodologies complement each other in both stages. Prior to the intervention, both gave a clear picture of the children’s social-emotional understanding and social competence, which was in line with the autism characteristics. After the intervention, the experimental study showed improvements reaching the level of typical development children in terms of emotional intelligence; this was highlighted through the case study.

Many studies focus on social skills training (e.g., Gillis, 2007; Guel and Vuran, 2010) but this one exclusively taught emotional understanding to promote social skills. Children in the present study were not directly taught social skills, or directed to initiate and interact with their peers at school or their siblings at home, yet the results disclosed an improvement in these areas. This indicates that the children were able to use their knowledge of understanding emotions to communicate better with others. The fact
that the social skills and competence were not taught, but improved as a result, indicates that teaching social-emotional understanding could be an important part of any intervention programme for children with autism. This finding correlates with studies in the literature review chapter - TOM section. Those studies posit that mind-blindness seen in children with autism, along with deficit in empathy skills, explains the delay in social communication (Caron-Cohen, 1995; Loveland et al, 1997; Frith, 2003). When children in the intervention were taught to read emotions of others, their social skills improved. We should take into account that those three children did not receive similar intervention which emphasizes the effect of teaching social/emotional understanding.

The importance of this study as an intervention programme is that it could be applied to children with high-functioning autism in mainstream schools, to contribute to removing the barriers they experience when interacting with their peers. The programme could be adapted in line with any type of intervention that the children usually receive in school. If the child receives school action or school action plus support, it could be administered by a teaching assistant or the special education needs coordinator outside of the class setting, where the child can have full concentration. The sessions could be applied individually or in small groups. Children in schools are in need for such a programme that will teach them what they lack - understanding emotions in all aspects. Children need to learn how to recognise emotions based on facial expressions, and to understand other cues that will help them identify emotions. Children are in more need to recognise complex emotions that are linked to social content such as surprise, embarrassed and afraid. They also need to learn how they themselves express different emotions in an acceptable manner. The last thing they need to learn is to give appropriate responses to empathise with others. If these concepts are included in the teaching programme for children with autism, they will have a better understanding of the social content and will improve their interaction with others which will in return improve friendship.
The level of difficulties is different for each child, therefore the teacher could assess the child’s ability to recognise emotions using simple assessments - such as the simple and complex emotions photographs used in the sessions here - to decide the base line, then conduct sessions with the child. The study is considered to be the first step to change the perception of social skills programmes used to educate children with autism in mainstream schools. Furthermore, the case study revealed new findings that show a lack of services is schools that are targeting emotional understanding and social skills and a lack of teacher training. There is a lack of evidence about the type of intervention that aims to teach social skills to school children; the literature reveals the strategies used in teaching children with autism in class (Wilkinson and Twist, 2010) but does not reveal the strategies in teaching social and emotional understanding. Schools in the UK provide general teaching of social and emotional aspects of learning (SEAL). The progress the children achieve depends on the types of activities that the school chooses to use (Humphrey et al, 2010), as well as the efforts the teachers provide. The study of Humphrey and his colleagues (2010) was designed to find the impact of SEAL on the children’s social and emotional abilities. It revealed that not all schools made good progress in implementing the impact of social and emotional skills and that further investigation and assessment is recommended. The researchers reviewed the types of activities provided in the SEAL programme and found them a great resource to support children’s ability to understand and promote social skills, but these activities assume that all children learn at the same pace, and neglect the fundamental features of autism. The current intervention programme is different from the SEAL programme as it is designed to take into account the difficulties children with autism have. For example, it teaches them how to recognise simple and complex emotions and how to learn these emotions from observing facial features and tone of voice. It also directs the children to know what type of emotions should appear in different social events. Such small steps cannot be included in the SEAL programme, as it is targeted at all children, the majority of whom have already developed these skills.
The government issued an important new proposal in March 2011, which presented new visions of special educational needs, taking into account the parents’ vision and the many difficulties they face in matters such as choosing the right school. It also considers the teachers’ level of knowledge and training. Overall it is an approach towards change in the special education services toward better life for children, their parents and the teachers (DFE, 2011). This vision was set in the Green Paper and proposes the following important approaches:

- supports better life outcomes for young people;
- gives parents more confidence by giving them control;
- transfers power to front-line professionals and to local communities.

Each of the above will be achieved, it is suggested, using different approaches, such as helping professionals to early assess problems and identify them as they emerge, support parents and give them a range of choices. These approaches were piloted and a new detailed plan was issued in May 2012. The results in the current study present a small scale of measure and come in line with the Green Paper vision, in that it presents the problems that children with high-functioning autism face in their social interaction. The positive outcomes can be seen to suggest that the intervention be used as an attempt to aid the children’s needs and provide support for their parents.

A remarkable effort was made by the NAS of Scotland (NAS Scotland, 2009), that highlighted some of the issues reported in this study. They put together a report based on an extensive survey from parents, individuals with autism and organisations to change the legislation, and to give ASD children and adults the support they need. The findings of the present study were similar to findings from this survey in terms of: problems of getting early diagnosis, lack of services, lack of teacher training, and lack of intervention. The key duties the government needs to apply are: (1) to compute the number of children and adults with autism; (2) appropriate assessment of their needs; (3) local areas are responsible for planning services to
meet the needs of children and their families; (4) teachers must receive professional training; (5) individuals of autism should be involved in planning the services they receive.

The intervention designed and evaluated for this study was the effort of one researcher that did not receive any support from groups or organisation. This fact resulted in the small sample size, and the short duration of the intervention programme, limits the results and minimizes its power. Therefore, if the study were to be repeated in the future with greater opportunity for using other methods of assessments, this would give powerful results as well as avoiding potential researcher bias. Future studies should use a thorough assessment of the children’s emotional understanding and social skills in order to give a clearer picture of their real levels prior to the intervention. Studies should not rely on the participants themselves to obtain data, but rather use direct observation of the participants’ performance to examine the effect of a new programme. The study proposed a relationship between social/emotional understanding and social skills and interaction. Although improving social/emotional understanding might not be sufficient to improve social interaction, the relationship is worth further exploring - very little research has been done to examine this relation. The available studies focus on the deficit of theory of mind in children with autism and their social deficit, but these studies assume that deficit in TOM is the cause of deficit of social skills. Those same studies tried to teach TOM tasks and indeed did succeed accept that results were not seen in their children’s social skills. I believe that emotional understanding deficit should be explored further with an open eye to its relation with social skills. Another important area I noticed needs further investigation is the effect of social skills programmes available and used in schools for children with autism or in mainstream schools. Studies like Downs and Smith (2004) are based on assessing the effect of an intervention programme that they did not conduct, but that the children had already taken. Studies like Jordan et al (1998) and Francis (2005) reviewed the available intervention programmes and did give many valuable results, but I believe that new reviews should be done to give up-to-date and more accurate data on evaluating the programmes that are now applied in schools to improve social/emotional understanding and social skills.

The difference in results between the children’s point of view and their parents should be investigated further. I believe that if this picture is clear - i.e., the children are aware of their true difficulties in social interaction with others, and that the way they see other’s emotions is different from others - then such intervention will be successful. There is no point in teaching children these skills when they do not realize that they are deficient in them. Especially when we are dealing with high-functioning children, reasoning
and understanding their strengths and weaknesses is possible and can open opportunities for them to learn and improve.

This study is noteworthy for its design where it was based on experimental group and a control group for comparison. We must not overlook the importance of such a design - one which is missed in many experimental studies. It is also worthy for devising its own intervention programme that was based on theories of autism, as well as the gap in the intervention available for children with autism.

**8.7 - Overall conclusion**

In summary, this study has shown a relationship between the cognitive ability to understand emotions, and social interaction competence in an in–depth but small-scale study. When the children had weak abilities to comprehend emotions, they had great difficulties in their social interaction (social skills and peer relations). However, when these abilities were improved through the teaching used in the intervention programme, the children improved in their social interaction. The other important result in the study was the improvement in the children’s empathy. It is possible that the improvements in children understanding the reasons for other people’s negative emotions (such as sadness) resulted in the improvement in their response towards their feelings. However, the results of this study should be taken into account cautiously, bearing in mind its limitations.

In conclusion, I hope that this study is a small step in promoting the children’s emotional understanding and social interaction. I also hope that it motivates further research in this field to look deeply into the relationship between the cognitive side of emotional understanding and the social behaviour.
References


360
Disoredrs. Vol 26, number,6, 673- 676

the social communication skills of children with high-functioning autism spectrum disorders.
*Journal of positive behaviour interventions.* 10, 162-178.


Spectrum Disorder: A description of single- subject design studies. *Journal of early and intensive
behaviour intervention.* 4: 3 462.

Gould, J., and Wing, L. (1979). Sever impairments of social interaction and associated abnormalities in


Green, G, Maurice, C, Luce, S, (1996). Behavioural Intervention for Young Children with Autism. Pro-
Ed Australia.

Blackwell publishing.


of mainstreamed settings on the social interactions and social integration of preschool children.
*American Journal on Mental Retardation,* 100, 359–377.

understand emotions, belief, or pretence? *Development and Psychology,* 8, 345-365.

Hadwin J., Baron-Cohen S., Patricia Howlin P., and Hill K. (1997). Does teaching Theory of Mind have
an effect on the ability to develop conversation in children with autism. *Journal of Autism and
Developmental Disorder,* 27, 519-537.

practical guide.* John Wiley and Sons


Appendix 1 - Home Activity 1

Today we looked at some faces that show us how people feel. We focused on simple emotions (happy/sad/afraid/angry). Played matching and guessing activities and chatted about our own feelings.

Home activity

Could you please help your child to bring from home to the next sessions various photos taken from magazines, internet or family albums.
Appendix 2 - Home Activity 2

Today we continue learning about simple emotions through games, activities and software.

Your task is

Choose one of these emotions then write about it below:

I have felt .................................................... When............................................................
............................................................................................................................
............................................................................................................................
............................................................................................................................
............................................................................................................................

I noticed someone felt......................................When............................................................
............................................................................................................................
............................................................................................................................
............................................................................................................................
............................................................................................................................

Choose another emotion from the above picture and write about it.

I have felt .................................................... When............................................................
............................................................................................................................
............................................................................................................................
............................................................................................................................
............................................................................................................................

371
I noticed someone felt...When...
Appendix 3 - Home Activity 4

What makes you feel angry?

1.
2.
3.
4.

What do you do to overcome your anger and solve your problem?

1.
2.
3.
4.

What makes you feel sad?

1.
2.
3.
4.

What do you do to overcome your sadness?

1.
2.
3.
4.

What makes you feel scared?

1.
2.
3.
4.
What do you do to overcome your fears?

1.

2.

3.

4.
Appendix 4 - Home Activity 5

Emotions detective worksheet

This week, be in the look-out for the following emotions (angry, frustrated, upset, happy, proud, surprised, excited, and embarrassed).

Clues to look for are: face expressions, tone of voice, and body language.

I found a clue:

<table>
<thead>
<tr>
<th></th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>During the day</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>In the evening</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 5 - Copy of the Research Ethical Approval

STUDENT HIGHER-LEVEL RESEARCH

School of Education and Lifelong Learning

Certificate of ethical research approval

STUDENT RESEARCH/FIELDWORK/CASEWORK AND DISSERTATION/THESIS
You will need to complete this certificate when you undertake a piece of higher-level research (e.g. Masters, PhD, EdD level).

To activate this certificate you need to first sign it yourself, then have it signed by your supervisor and by the Chair of the School’s Ethics Committee.

For further information on ethical educational research access the guidelines on the BERA website: http://www.bera.ac.uk/publications/guides.php and view the School’s statement in your handbooks.

READ THIS FORM CAREFULLY AND THEN COMPLETE IT ON YOUR COMPUTER (the form will expand to contain the text you enter).

DO NOT COMPLETE BY HAND

Your name: Wejdan Alsakran

Your student number: 520021306

Degree/Programme of Study: PhD

Project Supervisor(s): Braham Norwich and Elias Avramidis

Your email address: W.AI-Sakran@exeter.ac.uk

Tel: 07867975361

Title of your project: Assessment of a New Educational Program using Emotional Understanding and Social Interaction in Children with High-functioning Autism (Asperger's Syndrome)

Brief description of your research project:

A cognitive behavioural training experimental programme will be administered to a group of children with Autism with the objective of facilitating and promoting their social-emotional understanding and social interaction with other children and adults. The aim of the study is to evaluate the effectiveness of a training programme designed to enhance children’s understanding of other people’s feelings and emotions in a range of social situations. The research will also look at the effect the training

Chair of the School’s Ethics Committee
last updated: September 2007

376
programme might have on the degree and quality of children's interaction with others including parents and friends.

Give details of the participants in this research (giving ages of any children and/or young people involved):
Sixteen children with high-function autism will participate in the training programme. They will be between the age of 6 years and 11 years old with a normal to high verbal skills. They will be drawn from a list obtained from the local education authority of Ealing in London. Teachers and parents will take part in the assessment of the participants through a pre-designed report format.

Give details regarding the ethical issues of informed consent, anonymity and confidentiality (with special reference to any children or those with special needs)
Participants, their parents and their teachers will be assured to have the right to assume the records of their data be safeguarded and used as anonymous data only by the research staff. Identities of participants will not be revealed or published with results. A consent form will be sent to parents and professionals prior to commencing the intervention and all participants will be assured that all research data and results will be kept confidential. There is no intention to identify individual pupils or professionals in the final report and all data collected will not be disclosed to unauthorized third parties. Due to the nature of participants, children with autism need to be informed about the nature of the study, the aims and the activities in time to prepare them emotionally. These will be delivered through a written consent using understandable language and their parents should sign the statement. In addition, a pre session will take place one week before the training begins. It will introduce the children to each other and to the researcher and other adults helpers and a brief description for the program will be given. The researcher and a trustworthy volunteer school assistant or special education needs teacher will perform the training and all will sign a confidentiality consent statement. Children will be offered the chance to withdraw at any time from the training should they wish to do so.

Give details of the methods to be used for data collection and analysis and how you would ensure they do not cause any harm, detriment or unreasonable stress:
All participating children will have been diagnosed prior to the study through the local authority team. Specifically, it is those with aspergers syndrome who have normal to high verbal IQ (www.nas.org.uk, 2008). They will meet the conditions defined by the Diagnostic and Statistical Manual of Medical Disorders (DSM-IV) criteria for autism; the Autism Diagnostic Interview-Revised (ADI-R) criteria for autism (Lord, Rutter, & Le Couteur, 1994). The participant will be divided randomly in two groups (the experimental group is the group who will receive the training and the control group is the group who will not receive the training). It is important to note here that those allocated to the control group will be placed in a waiting list to receive the same treatment following the completion of the study. A follow up assessment will be applied to the experimental group to measure generalization.
The training program will take place in a safe nearby hall (it could be a school hall) and all procedures will meet the health and safety regulation. The tools used will be safe stationary tools such as pens, pencils, colors and papers. The participant will look at pictures of different people with various facial expressions or photos that contain acceptable social situation such as family or school event.
A pc program that is professed through official educators will be used in the training.
Prior to the experiment parents will receive a letter to inform them about the nature of the study and the privacy of the sitting and their children's identity. The environment of the training will be held in a relaxed and fun way to children. It will train them through games, acting and similar procedures.
The study is a quasi-experimental design in which measurements of the dependent variable will be carried out. All measurements are reliable and appropriate to children's age and condition. One measurement will be the Emotion Inventory test to assess children's level of emotional understanding. Observations of social interaction will be made in order to assess changes in the actual behaviour of the study subjects. Questionnaire and a report will also be conducted to measure

Chair of the School's Ethics Committee
last updated: September 2007
the children’s level of social and emotional skills. It will include items that are related to friendships and social activities. The effect of the experiment will be measured through comparing the pretest-post test results.

The experiment group will receive intensive training that will focus on teaching children how to recognise different emotions and feelings and explanations or reasons for these feelings. It will also teach them the expected feelings in different social situations. The children will not learn any other social skills or friendship skills. Ideally, what is learned in the experimental group will be transformed into other situations and will improve children's social interaction with others. After completing the experiment, the control group will receive the training while the experimental group measured.

There is certainly no intention on the part of the researcher to discuss sensitive, upsetting or embarrassing matters or cause distress to the participants during the intervention. Should this happen the intervention will be terminated and appropriate support will be provided (the child’s teacher and the school’s SENCO will be readily available and the child’s parents will be contacted should the distress persists).

Give details of any other ethical issues which may arise from this project (e.g. secure storage of videos/recording interviews/photos/completed questionnaires or special arrangements made for participants with special needs etc.):

All data will be stored in the researcher’s personal computer. A unique identification number will be assigned to all pupils and school staff taking part in the study. Data will be entered in relevant computer software (SPSS, NVivo, Atlas/vi) accordingly. Only the researcher will have access to the database. Following completion of the project all data will be kept for an extra period of 5 years.

Give details of any exceptional factors, which may raise ethical issues (e.g. potential political or ideological conflicts which may pose danger or harm to participants):

---

This form should now be printed out, signed by you below and sent to your supervisor to sign. Your supervisor will forward this document to the School’s Research Support Office for the Chair of the School’s Ethics Committee to countersign. A unique approval reference will be added and this certificate will be returned to you to be included at the back of your dissertation/thesis.

I hereby certify that I will abide by the details given above and that I undertake in my thesis to respect the dignity and privacy of those participating in this research.

I confirm that if my research should change radically, I will complete a further form.

Signed:...Wejdan...Alsakran.........................date:30-04-2009.........................

N.B. You should not start the fieldwork part of the project until you have the signature of your supervisor

This project has been approved for the period: April 09 until: 12 yrs

By (above mentioned supervisor’s signature):..................date: 21/5/09..................
N.B. **To Supervisor:** Please ensure that ethical issues are addressed annually in your report and if any changes in the research occurs a further form is completed.

SELL unique approval reference: D. 381 54

Signed: [Signature] date: 21/05/2009

Chair of the School's Ethics Committee

This form is available from:
http://www.education.es.ac.uk/students/index.php then click on On-line documents.

Chair of the School's Ethics Committee
last updated: September 2007
Appendix 6 - Sample of a Situational Feeling
Appendix 7 - Letter to Parents

Enhancing the social and emotional functioning of children with autism

Information leaflet for parents

Dear parent/carer,

My name is Wejdan Alsakran and I have been studying children with autism over the last 4 years. I am writing to inform you about a study which seeks to evaluate an intervention programme for enhancing the social functioning of autistic children in primary schools in London. The study forms part of my PhD research, which I am currently conducting at the Graduate School of Education of the University of Exeter under the supervision of Prof. Brahm Norwich. Given that your child’s school is taking part in the study, I am writing to ensure that you have no objection to this research. I am outlining below details of the research envisaged and clarify the nature of your child’s involvement in the study.

About the study

A frequently noted problem experienced by children with autism concerns the understanding of their own feelings and emotions and those of others. However, very little is known about the effectiveness of different approaches to assisting autistic children to develop more knowledge of and ability to recognise distinct emotional states. This study represents an evaluation of a short intervention programme designed to enhance the social skills of children with autism (or Asperger’s syndrome) within the age group of 7 to 11 years old. Specifically, children will meet in a school hall after school hours for approximately 45 minutes once a week for 5 weeks. A volunteer teacher and I will implement the intervention programme in a relaxed, safe and fun way. During each session, children will be trained using photo cards depicting emotional expressions, various games that contain acceptable social situations such as family or school events, and the utilisation of relevant PC software. It is expected that these activities will improve the children’s emotional understanding, which will, in turn, result in enhanced social interaction.

Who will be involved and how

As already mentioned, all KS2 pupils on the autistic spectrum will take part in the study. We will not leave anyone out on the grounds of any communication difficulties. We will find ways to include
everyone in this project. In addition, we will interview all KS2 teachers as well as the SENCOs in the participating schools. All data will be collected and analysed anonymously and the identity of the participants will not be revealed or published with the results. We are not interested in individual but only in group outcomes for the children involved.

What happens next?

I will carefully arrange with the head teacher and the classroom teachers involved my visits to the school with the aim of collecting my data with the minimum disruption possible. I am also sending a separate information sheet to children and I would be very grateful if you could talk to your child about the study and gave me your permission to include your child in the research by signing the enclosed form. It is worth noting here that the ethics committee of the Graduate School of Education of the University of Exeter has also approved this study. If you have any concerns about your child’s participation in the study please inform the school or contact me directly about it. You can reach me on the mobile number 07867975361 or email W.Al-Sakaran@exeter.ac.uk I will then arrange a 1-1 meeting with you to discuss all your concerns.

Thank you in advance for your cooperation,

Yours truly,

Wejdan Alsakran

Enhancing the social functioning of autistic children in integrated forms of provision (or: in mainstream primary school)

I wish / Do not wish my child to take part in this study involving emotional understanding.

…………………………………………………………………………………………………………………………

Signed

Please circle your response, sign and return this form to this address:

Wejdan Alsakran

70 Greenford Avenue

Hanwell W7 3QP

Alternatively, you can email me your response to: W.Al-Sakaran@exeter.ac.uk
Appendix 8 - Social Competence with Peers Questionnaire (pupils)

YOUR DATE OF BIRTH:               GRADE:               SCHOOL:

DATE:               AGE:               SEX:

Please put a circle around the rating which best describes you over the past 4 weeks.

Please answer all questions.

1. I have at least one close friend
   not true    sometimes true    mostly true
2. My friendships with other kids last a long time
   not true    sometimes true    mostly true
3. I find it easy to make friends
   not true    sometimes true    mostly true
4. Other kids choose me to be on their team at school
   not true    sometimes true    mostly true
5. Other kids invite me to their homes
   not true    sometimes true    mostly true
6. Other kids invite me to their parties or social events
   not true    sometimes true    mostly true
7. I get on well with my classmates
   not true    sometimes true    mostly true
8. I am popular amongst other kids
   not true    sometimes true    mostly true
9. Other kids like to sit next to me in class
   not true    sometimes true    mostly true
10. I see my friend or friends at weekends
    not true    sometimes true    mostly true
Appendix 9 - Social Competence with Peers Questionnaire (teachers)

DATE: \hspace{1cm} PUPIL’S NAME: \hspace{1cm} PUPIL’S SEX:

GRADE: \hspace{1cm} SCHOOL: \hspace{1cm} PUPIL’S AGE:

TEACHER’S NAME OR INITIAL:

Please put a circle around the rating which best describes this pupil over the past 4 weeks. Please circle the 0 if the item is not true. Circle the number 1 if the item is sometimes true. If the item is mostly true, then circle the number 2.

Please answer all items.

<table>
<thead>
<tr>
<th>Item</th>
<th>Not True</th>
<th>Sometimes True</th>
<th>Mostly True</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Has at least one close friend</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2. Has stable friendships with peers</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3. Peers like to sit next to him/her in class</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4. Finds it easy to make friends</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5. Is chosen by peers to be on their team</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6. Peers invite him/her to parties or social events</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7. Is popular amongst peers</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8. Is chosen by peers as a partner to work on a project</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>9. Has good relationships with classmates</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
Appendix 10 - Social Skills Questionnaire (parents)

DATE:  YOUNG PERSON’S NAME:  HIS/HER SEX:
GRADE:  SCHOOL:  HIS/HER AGE:

NAME OF PARENT COMPLETING THE FORM:

Please put a circle around the rating which best describes the young person over the past 4 weeks. Please circle the 0 if the item is not true of him/her. Circle the number 1 if the item is sometimes true. If the item is mostly true of him/her then circle the number 2. Please answer all items.

0=not true, 1=sometimes true, 2= mostly true

1. Listens to other people’s points of view during arguments 0 1 2
2. Makes requests from parents in a polite way 0 1 2
3. Controls his/her temper when he/she loses in a game or competition 0 1 2
4. Reacts appropriately if other kids tease him/her or say unkind things 0 1 2
5. Asks to join in activities with other kids in an appropriate manner 0 1 2
6. Expresses affection or positive feelings to others 0 1 2
7. Does kind things for others voluntarily 0 1 2
8. Gives compliments or says nice things to others when appropriate 0 1 2
9. Controls his/her temper when told off or criticized by parents 0 1 2
10. Asks permission before borrowing or using other people’s things 0 1 2
11. Shares things with other kids his/her age 0 1 2
12. Controls his/her temper during disagreements with other kids 0 1 2
13. Asks other kids if he/she may join in their activities 0 1 2
14. Has an appropriate facial expression (eg. not excessive grinning or aggressive) 0 1 2
15. Apologizes when he/she does something wrong 0 1 2
16. Joins in family activities 0 1 2
17. Invites others to join in games or activities 0 1 2
18. Tells a parent if he/she has a problem or needs help 0 1 2
19. Expresses sympathy or concern to others who are hurt or upset 0 1 2
20. Follows the rules in games or activities 0 1 2
21. Takes part in social or sporting activities with other youngsters 0 1 2
22. Takes part in conversations with adults 0 1 2
23. Makes eye contact appropriately with others during conversations 0 1 2
24. His/her tone of voice is appropriate (eg. not aggressive or unusual) 0 1 2
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>25. Controls his/her temper when he/she does not get his/her own way with parents</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>26. Laughs or smiles when appropriate</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>27. Takes part in conversations with other kids</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>28. Shows that he/she is listening to others during conversations</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>29. Can express his/her feelings of anger but without losing his/her temper</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>30. Stands up for him/herself appropriately if other kids act unreasonably</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
Appendix 11 - Social Skills Questionnaire (pupils)

YOUR DATE OF BIRTH:  
GRADE:  
SCHOOL:  
DATE:  
AGE:  
SEX:  

Please put a circle around the rating which best describes you over the past 4 weeks. Please answer all questions.

1. I listen to other people’s point of view during arguments  
   not true  sometimes true  mostly true

2. I make requests from my parents in a polite way  
   not true  sometimes true  mostly true

3. I control my temper when I lose in a game or competition  
   not true  sometimes true  mostly true

4. I control my temper if other kids tease me or say unkind things  
   not true  sometimes true  mostly true

5. I ask other kids in a nice way if I want to join in their activities  
   not true  sometimes true  mostly true

6. I show other people if I feel affectionate or good towards them  
   not true  sometimes true  mostly true

7. I do kind things for other people without having to be asked  
   not true  sometimes true  mostly true

8. I say nice things to others when they deserve it  
   not true  sometimes true  mostly true

9. I control my temper when I am told off or criticized by parents  
   not true  sometimes true  mostly true

10. I ask permission before I borrow or use other people’s things  
    not true  sometimes true  mostly true

11. I share things with other kids  
    not true  sometimes true  mostly true

12. I control my temper during disagreements with other kids  
    not true  sometimes true  mostly true

13. I ask other kids if I can join in their activities  
    not true  sometimes true  mostly true

14. The expression on my face is usually right (not always angry or grinning)  
    not true  sometimes true  mostly true

15. I say I am sorry when I do something wrong  
    not true  sometimes true  mostly true

16. I join in family activities  
    not true  sometimes true  mostly true

17. I invite other kids to join in my games or activities  
    not true  sometimes true  mostly true

18. I tell a parent or teacher if I have a problem or need help  
    not true  sometimes true  mostly true
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>19. I show that I am worried or that I care if someone is hurt or upset</td>
<td>not true</td>
<td>sometimes true</td>
</tr>
<tr>
<td>20. I follow the rules in games or sports</td>
<td>not true</td>
<td>sometimes true</td>
</tr>
<tr>
<td>21. I take part in games and activities with other kids</td>
<td>not true</td>
<td>sometimes true</td>
</tr>
<tr>
<td>22. I have conversations with adults</td>
<td>not true</td>
<td>sometimes true</td>
</tr>
<tr>
<td>23. I look people in the eye when we are talking</td>
<td>not true</td>
<td>sometimes true</td>
</tr>
<tr>
<td>24. My voice usually sounds friendly (not aggressive or unusual)</td>
<td>not true</td>
<td>sometimes true</td>
</tr>
<tr>
<td>25. I control my temper when I do not get my own way with my parents or teachers</td>
<td>not true</td>
<td>sometimes true</td>
</tr>
<tr>
<td>26. I laugh or smile when I am happy or hear funny things</td>
<td>not true</td>
<td>sometimes true</td>
</tr>
<tr>
<td>27. I have conversations with other kids</td>
<td>not true</td>
<td>sometimes true</td>
</tr>
<tr>
<td>28. I show other people that I am listening when we are talking</td>
<td>not true</td>
<td>sometimes true</td>
</tr>
<tr>
<td>29. I can show people when I am angry without losing my temper</td>
<td>not true</td>
<td>sometimes true</td>
</tr>
<tr>
<td>30. I stand up for myself if other kids behave badly towards me without losing my temper</td>
<td>not true</td>
<td>sometimes true</td>
</tr>
</tbody>
</table>
Appendix 12 - Social Skills Questionnaire (teachers)

DATE:   PUPIL’S NAME:   PUPIL’S SEX:
GRADE:  SCHOOL:    PUPIL’S AGE:
TEACHER’S NAME OR INITIAL:

Please put a circle around the rating which best describes this pupil over the past 4 weeks. Please circle the 0 if the item is not true. Circle the number 1 if the item is sometimes true. If the item is mostly true, then circle the number 2. Please answer all items.

0=not true, 1=sometimes true, 2= mostly true

1. Listens to other people’s points of view during arguments 0 1 2
2. Makes requests from teachers in a polite way 0 1 2
3. Controls his/her temper when he/she loses in a game or competition 0 1 2
4. Reacts appropriately if peers tease him/her or say unkind things 0 1 2
5. Asks to join in activities with peers in an appropriate manner 0 1 2
6. Expresses affection or positive feelings to others 0 1 2
7. Does kind things for others voluntarily 0 1 2
8. Gives compliments or says nice things to others when appropriate 0 1 2
9. Controls his/her temper when told off or criticized by teachers 0 1 2
10. Asks permission before borrowing or using other people’s things 0 1 2
11. Shares things with peers 0 1 2
12. Controls his/her temper during disagreements with peers 0 1 2
13. Asks peers if he/she may join in their activities 0 1 2
14. Has an appropriate facial expression (eg. not excessive grinning or aggressive) 0 1 2
15. Apologizes when he/she does something wrong 0 1 2
16. Spends free time in the company of peers 0 1 2
17. Invites others to join in games or activities 0 1 2
18. Tells a teacher if he/she has a problem or needs help 0 1 2
19. Expresses sympathy or concern to others who are hurt or upset 0 1 2
20. Follows the rules in games or sports activities 0 1 2
21. Takes part in games and activities with peers 0 1 2
22. Takes part in conversations with adults 0 1 2
23. Makes eye contact appropriately with others during conversations 0 1 2
24. His/her tone of voice is appropriate (eg. not aggressive or unusual) 0 1 2
25. Controls his/her temper when he/she does not get his/her own way with teachers 0 1 2
26. Laughs or smiles when appropriate 0 1 2
27. Takes part in conversations with peers 0 1 2
28. Shows that he/she is listening to others during conversations 0 1 2
29. Can express his/her feelings of anger but without losing his/her temper 0 1 2
30. Stands up for him/herself appropriately if peers act unreasonably 0 1 2
Appendix 13 - BarOn EQi: YV
### BarOn EQ-i: YV (S)

by Reuven Bar-On, Ph.D. & James D. A. Parker, Ph.D.

<table>
<thead>
<tr>
<th>Question</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. I can come up with many ways of answering a hard question when I want to.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. I get angry easily.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. I like doing things for others.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. I can easily use different ways of solving problems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. I think I am the best in everything I do.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. It is easy for me to tell people what I feel.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. When answering hard questions, I try to think of many solutions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. I feel bad when other people have their feelings hurt.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. I am good at solving problems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. I do not have bad days.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. I have trouble telling others about my feelings.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. I get upset easily.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. I can tell when one of my close friends is unhappy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. When I get angry, I act without thinking.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. I know when people are upset, even when they say nothing.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thank you for completing the questionnaire.
## Appendix 14 - Table of parents’ interview

<table>
<thead>
<tr>
<th>Area</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Developmental and medical history</strong></td>
<td>What is his/her birth order?</td>
</tr>
<tr>
<td></td>
<td>What were the developmental milestones from 0-3 years, 3-5 years, and 5 to date? (prompt questions will focus on physical, social and emotional, language, and cognitive development)</td>
</tr>
<tr>
<td></td>
<td>What concerns did you have about your child’s development and behaviour?</td>
</tr>
<tr>
<td></td>
<td>Does the child suffer from any medical condition?</td>
</tr>
<tr>
<td></td>
<td>Has s/he had any life event that left negative impact on the child?</td>
</tr>
<tr>
<td></td>
<td>How was the transition to enter school? Prompting question (Separation experience)</td>
</tr>
<tr>
<td><strong>Family life</strong></td>
<td>Who lives in the house (relatives and their age)</td>
</tr>
<tr>
<td></td>
<td>Are there any other children with similar difficulties?</td>
</tr>
<tr>
<td></td>
<td>What are your child’s favourite activities, hobbies, school subjects?</td>
</tr>
<tr>
<td></td>
<td>Describe your parenting style. Prompting question (ways of praising and punishment).</td>
</tr>
<tr>
<td></td>
<td>Would you do anything different and why?</td>
</tr>
<tr>
<td></td>
<td>What is your level of education and career?</td>
</tr>
<tr>
<td><strong>Diagnosis</strong></td>
<td>What is your child’s diagnosis? When? Who was involved?</td>
</tr>
<tr>
<td></td>
<td>Do you understand that your child has special needs? What are these special needs? How do you feel about them?</td>
</tr>
<tr>
<td></td>
<td>Did you share information about your child’s special needs with other family member or friends?</td>
</tr>
<tr>
<td>Questions</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Is the child aware of his/her difference and special needs?</td>
<td></td>
</tr>
<tr>
<td>What are your child’s strengths in his/her behaviour and ability of learning?</td>
<td></td>
</tr>
<tr>
<td>What concerns do you have about your child’s schooling and his/her future?</td>
<td></td>
</tr>
<tr>
<td><strong>Descriptions</strong></td>
<td></td>
</tr>
<tr>
<td>Describe your child’s daily routine and the level of attachment to routine?</td>
<td></td>
</tr>
<tr>
<td>Describe the child’s relationship with (You, father (if applicable), siblings (if applicable).</td>
<td></td>
</tr>
<tr>
<td>Describe your child’s social communications with others?</td>
<td></td>
</tr>
<tr>
<td>Describe your child’s social skills strengths and difficulties?</td>
<td></td>
</tr>
<tr>
<td>In your opinion, are there any factors that increase or decrease the child’s difficulties? Explain?</td>
<td></td>
</tr>
<tr>
<td><strong>Causes</strong></td>
<td></td>
</tr>
<tr>
<td>What do you see as the cause of the difficulties? Prompting question (are they related to parenting styles, type of disability, lack of intervention etc)?</td>
<td></td>
</tr>
<tr>
<td>Do you think these difficulties could be prevented? How?</td>
<td></td>
</tr>
<tr>
<td><strong>Social emotional interaction</strong></td>
<td></td>
</tr>
<tr>
<td>Does your child express her/his feelings (prompting question does s/he show you when angry)?</td>
<td></td>
</tr>
<tr>
<td>Describe the child’s ability to understand your feelings and the feelings of peers?</td>
<td></td>
</tr>
<tr>
<td>Describe the child’s reaction to other people’s negative emotions such as sad or angry?</td>
<td></td>
</tr>
<tr>
<td>How does your child start a conversation with you or with other adults?</td>
<td></td>
</tr>
<tr>
<td>Is s/he frightened from specific objects? What are they? What is his/her reaction</td>
<td></td>
</tr>
<tr>
<td>How does the child interpret others people behaviour?</td>
<td></td>
</tr>
<tr>
<td>Describe his/her relationship with his friends? Prompting (is it rapport, one side attention)</td>
<td></td>
</tr>
<tr>
<td>How many friends does your child have?</td>
<td></td>
</tr>
<tr>
<td>What is your role in sustaining his friendship?</td>
<td></td>
</tr>
<tr>
<td>Does your child seek to make friends?</td>
<td></td>
</tr>
<tr>
<td>How easy does your child finds it to attempt communications or maintain</td>
<td></td>
</tr>
<tr>
<td>How does your child react to other people remarks on him/her?</td>
<td></td>
</tr>
</tbody>
</table>

**Impact**

| Describe the impact of your child’s social delay at home and at school? |
| How does this make you feel? |
| How does your child feel about himself? |
| Do you think that your child’s relationships with others are affected by his/her social and emotional difficulties? How? |
| Has your child experience any bullying? How? |
| How does s/he feel about it? How does s/he deal with bullies? |
| What are his/her strategies to solve his/her problems? e.g., when feeling sad or angry. |

**Intervention**

| What opportunities do you have to express your concerns about the child and seek support? |
| Who gives you support and how? |
| What are the most useful strategies used to overcome his/her difficulties? |
| Is there any type of intervention that has helped your child to improve social skills? If yes, explain in what way it helped? |

**Services to support child and family**

<p>| Where does your child go to school, how long there |
| What support is offered to your child at school? |
| what level of SEN is your child at school action, school action(plus) or with a Statement |</p>
<table>
<thead>
<tr>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have there been any issues over statementing? If so please explain</td>
</tr>
<tr>
<td>Is the level of support for your child satisfactory – explain what is</td>
</tr>
<tr>
<td>offered; if not why not</td>
</tr>
<tr>
<td>What contact does your child have with mental health services? With who</td>
</tr>
<tr>
<td>and frequency?</td>
</tr>
<tr>
<td>What do they offer</td>
</tr>
<tr>
<td>Are you satisfied with this level of service?</td>
</tr>
</tbody>
</table>
## Appendix 15 - Table of teachers’ interview

<table>
<thead>
<tr>
<th>Area</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perception</strong></td>
<td>When did your concerns first arise?</td>
</tr>
<tr>
<td></td>
<td>What are the child’s strengths in their behaviour and approach to learning?</td>
</tr>
<tr>
<td></td>
<td>Do you have any concerns about the child’s understanding of social skills?</td>
</tr>
<tr>
<td><strong>Causes</strong></td>
<td>What do you see as the cause of the difficulties? Prompting question (are they related to parenting styles, too much TV, dietary factors or genetic…etc)?</td>
</tr>
<tr>
<td></td>
<td>Do you think these causes could be prevented?</td>
</tr>
<tr>
<td><strong>Diagnosis</strong></td>
<td>Has the child been diagnosed? By whom?</td>
</tr>
<tr>
<td></td>
<td>How do you feel about this diagnosis? (Did you want him/her to be diagnosed? Why?</td>
</tr>
<tr>
<td></td>
<td>Do you understand that that child has special needs? How do you feel about that?</td>
</tr>
<tr>
<td><strong>Impact in social/emotional life</strong></td>
<td>How would you describe the child’s academic performance?</td>
</tr>
<tr>
<td></td>
<td>Do other children also have the same difficulties? Why?</td>
</tr>
<tr>
<td></td>
<td>Does the child have any IEPs? What specific targets have there been – how has progress been towards these goals?</td>
</tr>
<tr>
<td></td>
<td>Describe the child’s social interaction with you and his peers?</td>
</tr>
<tr>
<td></td>
<td>Describe the child’s level of understanding social skills? e.g. Greeting, responding when talked to.</td>
</tr>
<tr>
<td></td>
<td>Describe the child’s ability to understand your feelings and the feelings of peers?</td>
</tr>
<tr>
<td></td>
<td>Is the child’s relationships affected by these difficulties? How</td>
</tr>
<tr>
<td></td>
<td>How do these difficulties make you feel?</td>
</tr>
<tr>
<td>How do other children respond to this behaviour?</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>How does the child’s behaviour affect your teaching and teaching plans?</td>
<td></td>
</tr>
<tr>
<td>Does the child’s behaviour affect other children’s learning? How?</td>
<td></td>
</tr>
<tr>
<td>What factors decrease or increase these features</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intervention</th>
<th>What opportunities do you have to express your concerns about the child and seek support?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Has the child receive any social skills training? What was it? How it helped?</td>
</tr>
<tr>
<td></td>
<td>Who give you support and how?</td>
</tr>
<tr>
<td></td>
<td>Describe the teacher’s assistant role with the child if applicable</td>
</tr>
<tr>
<td></td>
<td>What are the most useful strategies to accommodate the child’s learning and behaviour?</td>
</tr>
<tr>
<td></td>
<td>Are there other strategies you think should/could be used?</td>
</tr>
</tbody>
</table>
# Appendix 16 - Table of children’s interview

<table>
<thead>
<tr>
<th>Appendix 16 - Table of children’s interview</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Home life</strong></td>
</tr>
<tr>
<td>What do you like to do when you are free at home?</td>
</tr>
<tr>
<td>Whom do you like to play with?</td>
</tr>
<tr>
<td>How is your relation with your mother/ father/ brother sister?</td>
</tr>
<tr>
<td>How can you let your family know how you feel?</td>
</tr>
<tr>
<td>Can you tell when your mother/ father/ sister or brother feels unhappy or hurt? What do you do</td>
</tr>
<tr>
<td><strong>School life and intervention</strong></td>
</tr>
<tr>
<td>What do you like to do during playtime at school?</td>
</tr>
<tr>
<td>How many friends do you have? How did you meet them?</td>
</tr>
<tr>
<td>How do you start a conversation with them?</td>
</tr>
<tr>
<td>How can you let your friends know how you feel?</td>
</tr>
<tr>
<td>How does it make other people feel?</td>
</tr>
<tr>
<td>What are your favourite subjects?</td>
</tr>
<tr>
<td>Do other children ask you to play with them?</td>
</tr>
<tr>
<td>If you do not like someone, what do you say when he/she wants to play</td>
</tr>
<tr>
<td>What support do you get in school?</td>
</tr>
<tr>
<td>What did you learn from these activities?</td>
</tr>
<tr>
<td><strong>Childs strengths and weaknesses in emotional/ social</strong></td>
</tr>
<tr>
<td>Can you tell when someone close to you feels unhappy or hurt? What do you do or say to them?</td>
</tr>
<tr>
<td>Write a list of things that make (child’s name) sad or upset.</td>
</tr>
<tr>
<td>understanding</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Appendix 17 - Sample of Case Study Transcript (Oliver’s Mother)

Wejdan: there are different areas that I would like to talk to you about. First we will speak about his general developmental milestones in his early years and then halfway in the middle and the last three four years.

Mother: Okay.

Women: I know it has been long time but if you can remember. Most important milestones in his early years I would say from birth until he was three his language development, his physical development, his cognitive development and specifically his social and emotional development. What can you remember?

Mother: I know… it was in most of the normal things when he was a baby normal kind of sitting and rolling and sitting and walking they were all normal. In fact he was sitting early he was sitting by about five months although he did not like to walk his big fat baby it was not easy. He was he was two weeks late, he was 10 pounds when he was born just four and half kilos big baby. He was this big fat round blob. Sounds you know what I mean he was very fat… rolls of fat on his arms and legs.

Wejdan: That is what typical baby

Mother: Yeah, exactly. But he was like and yeah so he was sitting and, you know, and he was crawling by against eight nine months so he kind of normal he was walking just after a year so all those kind of things were quite normal. I did wonder about his speech at one point because it did not seem to be when he was about fifteen sixteen months. He was not really babbling so much and he was taken down to the hospital he had a hearing test and they said his hearing was normal and he was at the time we saw the hearing guy he was sort of starting to try and say words but not very many. But by the time he was a couple of months older may be eighteen, nineteen months older it was like somebody had switched on a light and oh my goodness new words were coming and coming and coming and you could not shut him up once he started. So, you know, I mean he was still within perfectly normal time frames and that was you could not stop him talking Yeah, in terms [____] so that kind of, you know talking delay and so on but….. I mean I did not really notice too much difference with him when he was really little because toddlers do not really play
together anyway with each other so there was not really I think particularly noticeably different at that point.

Wejdan: Yeah that is true. What about after that from age three…

Mother: When he went to pre-school and he did not like to sit on the mat doing group activities he hated to sit down with a big group of people doing singing and stories. He would like to listen to the stories somewhere else and they had difficulty getting him to sit down to have snacks and he didn’t want to conform in group situations very definitely. And then when he went to school nursery there was always this thing in the playground he was always convinced if somebody bumped in to him or tripped him up or hurt him it was…you know, usually I mean children are like in a playground its an accident they come running round like mad they bumped into each other. He was always convinced they did it on purpose they hit him on purpose and then he would turn around and he hurt them back and that was kind of when we started to go mmmmm okay..

Mother: Yeah Yeah. Are they kind of carried on. You know he was learning so, you know, intelligence wise we never [_____] he was learning everything he was supposed to be] moving on to reception. Again he was fine in the classroom he was behaving reasonably, you know, as reasonably as all the other children as far as we can work out. It was the playground that was a problem and I found out rather later on but actually part of the problem was he had one great friend and another child decided he was going to muscle in on this and he did not like being friend with Alexander. And he apparently now says later on quite happily he was deliberately trying to break them up and he would cause trouble and Alexander would he would play what he thought were games where he would take someone’s hat and run away with it. He would do it over and over and over and over he did not know when to stop and then he would get into trouble for that but actually looking back on that although he did not know when to stop when and he should have done he was being provoked definitely. We spent a lot of time me and the other two parents trying to get them to all be friends together. And that was partially successful until they shuffled the classes when they moved from reception to year 1 and then he was split from the other two of them and because this friend was then very happy that he was not around the friendship fizzled out.
Wejdan: So sad.

Mother: But that was kind of, you know that was that and then during year 2 teacher was picking up on some odd behaviour and she was concerned and at that point time I was kind of starting to be concerned about social behaviour mainly how he was interacting with the other children?

Wejdan: So what specific concerns at that time?

Mother: So looking at how he reacted with other children, how he does not know when to stop when he thinks he is playing something and he thinks it is a really funny idea. The other things I had problems with I had problem with sensory over strung senses of smell. I would find things like walking down the streets if you go under the railway bridge when a train going over I know it is loud and I know its horrible none of us like it I knew that oh that is really horrible but he would be on the ground in a little heap, with his hands over his ears his head into his chest tucked up because he could not stand the sound. There were times when he walked up street with me and if you take out a still really calm winters morning when it is slightly foggy and you have all traffic fumes in the air and they do not go anywhere because they cannot. He would vomit at the smell. He would be walking up the street he would gag he would vomit in the street things like that. So...they seem to...he seems to have learnt to manage them better now as he has got older. I have not had...[____] he complaints bitterly..I feel sick, I feel really sick But he is not actually vomited from it But still, he still sometimes put his hands over his ears but he does not kind of collapse in a little heap on the floor any more.

Wejdan: What about going to places like supermarkets or visiting people...

Woman: He does not like it

Wejdan: Do you have any concerns when you are around anyone?

Woman: Yeah, he does not like going to other people's houses very much. He does not feel...I think he does not because it is not familiar, he is not comfortable, he is not sure how he is to act what he can do. I know that he be polite if you talk to him he would initiate a conversation with people and yeah he just kind of it is very difficult
to know where the boundaries are because he knows they are very clear at home but
he does not have necessarily seem to apply the same ones to somebody else’s house.
So whilst I would not let him do certain things at home he would try to see if he can
do the same things at somebody else’s house and see if somebody tells him he is not
allowed to do it. Because children do kind of learn there are different rules at other
people’s houses but he takes it to extreme and really pushes about recent times.

Wejdan: Okay and….

Woman: So often we kind of say, you know, well you are going to somebody else’s house.
You think what you are allowed to do in my house but you are not going to be
doing anything different …and I kind of spell it out].

Wejdan: That is because, he has to control these things it add up more pressure to him.

Woman: Exactly.

Wejdan: That is why it is not comfortable to go to someone’s house. What about the general
health, medical health and his medical history?

Woman: Yeah, he had very bad eczema as baby. Even while I was still breast feeding when he
was three four months old he had eczema. The normal places you get it so in your
elbow, behind your knees but also on his face little patches on his cheeks. We had
creams from the doctor and that was how I found out about the allergies I had
gone…there was certain times, you know, when you have…you are trying to feed
later when he was on solid food and then when they are hungry instantly hungry and
starving and can’t wait and screaming and I used to put him in a high chair and give
him something to keep having a crack or some bread sticks or something while I
was actually preparing food and there were certain things I would give him and he
would scratch his hands or scratch his face when he had eaten them and in fact he
would scratch his face until it was bleeding sometimes. One of the things I could
not give him was humus and I had not really worked out why I just knew that this
caused a reaction and I had to stop. But there were other things that you know and I
kept saying I could see him scratching or could see him the very first time I ever
gave him actually a whole egg I gave him scrambled egg he must have been about
fifteen months old and about an hour later he did not seem to like it very much and
did not seem to take it. But I thought well it is a new taste they don't want to take new things about an hour later he vomited all over the carpet so obviously I kind of did not know why but I went wont be giving him that again in a hurry but I had gone to the doctors and I said look there seems to be certain foods that make his eczema worse and the doctor sat there and said and he said do not be stupid eczema is not affected by what you eat and I started arguing with him because my husband has eczema and if he has too much a lot of dairy or if he has a lot of ... we have been out to people’s houses and he has had a lot of alcohol for him that is more than a couple of beers in a week that would be a lot his eczema will get worse and his hands will be itchy, his fingers then ends will split, his skin will split, it really does affect his eczema and I know it is food related so I sat and I argued with the doctor so just to get me out of his surgery he agreed to refer me to the paediatrician and in the meantime I got the appointment through and I kept a food diary before I went to see the paediatrician who when I told her what the doctor had said was so cross, I wish they would read the research because it is not true it really does affect but she looked at the food diary I kept and she went okay we are going to test him for allergies this this this for looking at what I had said he had been eating and when this seems to get worse and it turned out he was allergic to eggs hence the projectile vomiting, to sesames seeds which was humus which is made with ground sesame seeds so that is why he was itching his face when I gave him the bread sticks and humus. He was allergic to Soya flour or Soya in anything to Almonds and I have never ever given him nuts but I do not know how that came about. It was eggs, nuts and seeds and soya at the time and that was all from what she tested.

Wejdan: They did not tell you about the fish.

Mother: Well I have been feeding him fish, he has been trying and then a month or two later we were moving house and he went to a friend of mine’s house he went to play with her daughter of same age and she was going to feed him tea because I was clearing out the attic [_____] and we did not want him running around as a toddler while we were up and down the attic ladder trying to get things out so she had him over for tea and at the same because of the eczema he had been taken off dairy and he had been taken off wheat as well so he was on this completely gluten free dairy free as well as the other things he was allergic to and she cooked vegetables and potatoes and fish and because she was so worried about.....She had literally poached the fish
in water that’s all she had done it was a piece of cad. He had taken one mouthful of
the fish, spat it out and his face was all inflamed and red and his hand where he
touched where he scraped out of his mouth and his tongue and it was all red bright
red and itchy he called me you got to come over what do I do help and so at this
point we found he was allergic to white fish,

Wejdan:  ...and even though you were feeding him before?

Mother:  Yeah but at this point I could still feed him oily fish I still fed his salmon and
Mackerel and all the oily fish and that was fine but I could not feed him white fish
and then gradually he became allergic to those as well…and we would get an allergic
reaction.

Mother:  So that became worse over time

Wejdan:  He is very educated about it and he knows

Mother:  He is very educated

Wejdan:  How do you explain these things and how did you teach him about it.

Mother:  I guess because it is such a horrible scary feeling for him in his mouth when he eats
something he does not want to eat these things anyway so actually you know he
would not eat and if you said to him this is going to make you ill, you are allergic to
it, it is going to make you ill, it is going to make you itchy, he did not want that
feeling so actually he will be okay about it we have gone through phases where he
has got very upset about it because he is on this restricted diet he cant eat what
everybody is eating and he gets very upset about it specially when the bakers opened
and everybody was going into the bakers after school and getting cakes on the way
home and he says it is not fair I cannot eat anything why cannot I, why do I have to
be allergic to everything why can’t I...and we had lots and lots and lots of upset at
that point and it comes and goes a bit but mainly on the whole he is accepting of it
because he does not want to feel so bad as he does when he is having an allergic
reaction.

Wejdan:  Do you feel that he becomes more cautious about it and avoid everything?
Mother: He does and I feel he is almost in some ways got me other way because he is really funny about sitting next to other people who are eating something he is allergic to and actually I must admit I tried to stamp down on it at home and I keep saying look I am only sitting next to you I can control where my food goes I am using cutlery I am not touching it and I am not putting it in your mouth am I so you are going to be fine but I know he is still funny at school and when he goes to other places.

Wejdan: Is that why he does not want to eat anything when he comes here?

Mother: Probably partly because of that and also partly because he is possibly not hungry because he will have eaten lunch and he sometimes does he has a snack when he comes home sometimes but not always sometimes he comes over and says actually I am not hungry today sometimes he comes and says I am starving what can I eat but we have kind of gone with him because he does really regulate how much he eats by himself. I know that Alex wants to eat something for a meal I will insist he eats a main course quite often he will not have anything afterwards because he is full or he will have something else and something else and we just let him run with it.

Wejdan: That is good.

Mother: When he was first allergic to everything and I was really paranoid about how much he was eating was he eating everything was he getting a balanced diet because ......I use to make him eat all the time and I used to make him eat what I thought was and it took me a long and he was really funny about eating and I just had to feed him much later than you would expect to actually get him to eat so it would take him a very long time to eat a meal and so on and so forth and everybody kept saying you have got to step back he is kind of playing you and it actually took me a very, very long time to let go on and then to just let him get on with it but it did help a lot when I did.

Wejdan: That is good.

Mother: The other thing is that actually going back when he was I know two, three, four, five he used to be upset about things and he would get really upset and he doesn’t know
how to manage his anger and he would cry but he would often come to the dinner
table did not like the look of what was on the table and burst into tears but he
would actually deliberately I do not know it seemed to me like it was deliberate but I
do not know if it actually was to be fair but he would work himself up so much and
you could hear him upset and he would work himself to such a state he vomited all
over his plate [_____] I used to clear it up bring more food but he got to such a state
that I lost my temper once very badly at my mother in law’s house he did this at
dinner and he had been doing at every single night that week he vomited on his
dinner plate and I had enough, you have been sick you are clearly ill sick children go
to bed and I put him to bed at 5.30 and I had the rest of the family that you cannot
do this he is going to be up at 5 AM I do not care you have not been in my house all
week you had not dealt with vomiting all week I cannot deal with it any more and if
he gets up at 5 o ‘clock I will get up at 5 o’clock in the morning and deal with it he is
going to bed and he is staying there. He never actually vomited on his plate ever
again after that.

Mother: It did work. It did work and I was quite shocked that it did actually have such
[_____] I feel he was working himself up and that don’t you dare be sick on your
plate you calm down now you stop [____].

Wejdan: I would like to ask you about moving to school how was the transition from going I
know based are quiet young from nursery but let us remember just this period the
separation from you...being in another setting new environment and then after that
being in [_____] school.

Woman: Right right right back when he was really little I remember trying to put him in the crèche at the gym and he used
to cry until he was sick and they would come and get me] I know that sounds a little bit familiar, he did not like it, he use to
make himself cry until he vomited they would come and fetch me so he would not be by himself he would play at the
créche quite happily if I left the room that was it he could not deal with it, the fact that they were the same staff the whole
time and they were really good with him but he was not having any, he was going to have me in that room or nothing. It
was hard for him. That was probably from a year to probably between a year and I think shortly after we tried for a month
or two.
# Appendix 18 - Researcher’s Disclosure Certificate

## Applicant Personal Details
- **Surname:** ALSAKRAN
- **Forename(s):** KEJOAN ABDULLAH F
- **Other Names:** NONE DECLARED
- **Date of Birth:** 23 AUGUST 1971
- **Place of Birth:** KHALAJ
- **Gender:** FEMALE

## Employment Details
- **Position applied for:** POSTGRADUATE COURSE
- **Name of Employer:** UNIVERSITY OF EXETER

## Countersignatory Details
- **Registered Person/Body:** UNIVERSITY OF EXETER
- **Countersignatory:** PAMELA ANNE HAWK

## Police Records of Convictions, Cautions, Reprimands and Final Warnings
- NONE RECORDED

## Information from the list held under Section 142 of the Education Act 2002
- NONE RECORDED

## Protection of Children Act List Information
- NONE RECORDED

## Protection of Vulnerable Adults List Information
- NOT REQUESTED

## Other relevant information disclosed at the Chief Police Officer(s) discretion
- NONE RECORDED

## Enhanced Disclosure

This document is an Enhanced Criminal Record Certificate within the meaning of sections 115 and 116 of the Police Act 1997.

## Use of Disclosure Information

Continued on page 2

---

**THIS DISCLOSURE IS NOT EVIDENCE OF IDENTITY**

Criminal Records Bureau, PO Box 163, Liverpool, L69 3JD. Helpline: 0870 90 80 844 © Crown Copyright 2007
Appendix 19 - Freddie & Oliver’s Assessment Report for Case Study

Freddie’s Assessment

The following is information regarding Freddie’s assessment.

1. Referral Information:

Freddie was referred for an assessment due to concerns regarding behaviour, especially concerning social communication difficulties and attention deficiency difficulties. Dr. S stated that the child has poor social skills with an inability to make friends and participate with peers. He is excessively attached to TV and books. He generally ignores surrounding environment and has an angry, screaming behaviour when asked to conform.

2. Interviews:

(a) Presenting Problems:

Home - Freddie is very shy child that is afraid of spiders and of being upstairs alone in his room (this fear started after Freddie watched a scary movie 3 years ago). He does not like to colour, draw or write and his difficulty with his fine motor skills/motor-co-ordination make it hard for him to throw/catch a ball, tie his shoes or use a fork and knife. Family encourages him to make friends, but he has had issues with bullying since coming to the UK. Freddie has had no contact with mental health services.

School – Freddie does well academically at school, but will not initiate any interaction with peers at school, will only respond if they approach him. Initially, he was bullied physically and verbally and now would rather be left alone then mix with the others. An Educational Psychologist found that Freddie shows delay in his communication skills and is showing signs of Dyspraxia.

Social Interaction – Freddie does not initiate interaction with peers and says “I don’t mind being alone at school” and “They don’t bother me or call me stupid boy when I am all by myself.” He would rather watch television or read books, especially about history. He exhibits socially and emotionally inappropriate behaviours. Freddie takes language literally, for example, the teacher said to him “put down your book and start doing your task” and Freddie’s response was “no, it’s not my book” because he borrowed it from the library.
Relationships – Freddie has relationships with his family and family friends, but finds it difficult to make friends at school.

Restricted/Repetitive Behaviour – He has an obsession with reading books and watching television, has a habit of rocking and seems to do things in a certain manner.

3. Background Information:

Family Background – Freddie was born in Iran to healthy parents. His mom is a social worker and his dad is a journalist. He has 6 year old and 2 years old sisters. No family history of mental health. The family moved to the UK when he was 7. The move to the UK was quite upsetting for Freddie.

4. Developmental and Medical History:

Infancy and Toddlers Years – Freddie’s mom doesn’t remember any exact milestones, but started to become concerned about his fine and gross motor skills in the early years. He always had good relationships with family members, but at the age of 7, his mom noticed that he would get upset and angry with his friend. Freddie would rather look away and would only give fleeting eye contact. He played pretend as a child, but played the same game with the same story. He used to share well, but recently has become impatient.

Physical Health – His general health is good.

5. Interview Observations:

On the way to the assessment room, Freddie was fascinated with the notice boards and tried to stop to read them. Once in the room, he immediately was interested in the TV, video and computer keyboard and started to touch the buttons. He appeared happy to talk and tended to dominate the conversation. His appeared to have limited facial expressions and his gaze indirect at times. Freddie misinterpreted the interviewer’s tone when he congratulated him on answering a question with a “scary voice” and commented that he’d seen a scary movie and gets frightened at night and is afraid of the dark.

Freddie rocked his feet back and forth throughout the assessment, described it as a habit of his. Stated that he likes his own space, prefers to be on his own at school and doesn’t have many friends; also mentioned that he’d been bullied in the past, but deals with it by standing up for himself more.
6. Information from School and Education Psychologist:

Freddie’s teacher stated that he was good at reading and math, but not good at art, P.E. and presentation in all subjects. The teacher said that Freddie has trouble keeping friends, following directions and is resistant to help/support in class. His progress report shows that he “will often make thoughtful and interesting contributions in class” and is confident at expressing his own opinions. Freddie receives one session of support weekly from SENCO. SENCO observed that Freddie makes an effort to fit in with peers, but doesn’t have the skills to do so and that he has poor handwriting, pencil control and movement control.

The educational psychologist observed that Freddie didn’t attempt to engage with peers and walked around on his own during playtime. During their session, Freddie demonstrated limited eye contact and spoke in a monotonous way that was emotionally flat. The educational psychologist completed the Wechsler Intelligence Scale III (it was found that Freddie was slow at completing performance tasks and has difficulty with reasoning) it was noted that his verbal IQ score was average, while his performance IQ was borderline learning difficulties range. The following tests were also conducted: Weschler Reading Test (scored at a 16 year old + level), Weschler Reading Comprehension Test (scored at an 11 year old + level), Wechsler Spelling Test (scored at a 14 ½ year old level) and the Wechsler Numerical Operations Test (scored at a 9 year old level). The educational psychologist observed Freddie’s difficulty with handwriting, possibly due to fine and gross motor delay and sensory integration difficulties. It was recommended that Freddie see an occupational therapist to foster development of peer interaction skills and address communication anxieties and difficulties.

7. Screening Tools:

(a) Strength and difficulties questionnaires (SDQ) – these were completed by Freddie’s mom and by school. They both gave scores within the “abnormal” range for conduct problems, hyperactivity and peer problems. Both observed fewer emotional symptoms with Freddie (his mom gave a score within normal range and the school gave a score in borderline range). Freddie’s mom gave Freddie a score in the normal range for prosocial behaviour, while the school gave a score in the abnormal range.

(b) DuPaul - Questionnaire asks about symptoms of ADHD. Responses must be consistently high across both school and home for a probable diagnosis. Freddie’s scores from the school were
significantly higher than parental scores, which indicate Freddie has more difficulty with inattention, hyperactivity and impulsivity at school than at home. An ADHD prognosis is unlikely.

(c) Short Sensory Profile – Questionnaire was completed by Freddie’s mom who noted a few areas of difficulty with multi-sensory processing including tendency to have weak muscles and tire easily. He was rated to not attend to auditory input so he filters out much information that he hears. Freddie may have sensitivity to certain tastes and textures.

(d) Children’s Communication Checklist (CCC) – Designed to assess aspects of communication. The school rated Freddie with a score of 114, which indicates significant difficulties with pragmatic language, especially in areas that assess stereotyped conversation and use of context.

(e) Emotion Cards – Freddie was shown a series of 10 cards depicting children in scenes with different facial expression of emotion. He was able to correctly identify happy, sad and angry, but found it difficult to interpret both the context of the picture together with facial expressions. For example, Freddie believed a girl being bullied was happy and he misinterpreted her frown face as laughing. The more complex emotions, such as guilty, we difficult for him to understand.

(f) Happé stories – Short stories that test ability to recognize irony, sarcasm, lies, deceit, etc. In general, Freddie was about to interpret situations appropriately. He had some difficulty understanding contrary emotions, such as being both happy and sad at the same time.

(g) Sequencing cards – This tests the ability to understand correct sequencing of a number of pictures to make a story. Freddie did well on this test.

8. Formulation:

Freddie is a 10 year old boy who was referred due to concerns with his behaviour, especially in regards to social communication and attention deficiency difficulties.

Freddie was born in Iran then moved to England at the age of 8. His mother always knew that he had social communication difficulties, but was not concerned about his friendships, ability to pretend play, sharing or the rate at which he achieved his developmental milestones, but has become more concerned with the development of his fine and gross motor skills in recent years. The transition to a new school and
bullying may have contributed to his difficulties; both his mother and school have observed social communication difficulties that have not improved. Freddie has a lack of interest with social interactions and has demonstrated inappropriate social and emotional behaviours. He is prone to high levels of activity at school and can appear inattentive and impulsive. Freddie may appear anxious when he doesn’t understand what is required of him and is likely to be more active and impulsive at these times. In contrast, Freddie does understand what is expected of him and has been observed to sit quietly and concentrate on the task at hand.

Overall, the school has observed that Freddie has settled down over the last 2 years; adapting to the new school and lifestyle. His social communication difficulties appear to be more extreme than if they were solely attributable to difficulties in re-settlement. Responses to screening questionnaires, school reports, educational psychology report, clinic observations and interview with Freddie’s mom suggest that he meets the criteria for Atypical Autism. This may be understood in terms of symptoms that are consistent with those for Asperger’s Syndrome but where it has been unclear as to the age of onset:

A. Freddie appears to have a qualitative impairment in social interaction,

B. Freddie also appears to have some restricted patterns of behaviour, i.e. refusing to do an activity at school until a specific pencil had been found.

C. Freddie’s difficulties with social communication are causing significant impairment with social functioning at home and school.

D. There was no report of Freddie having a clinically significant general delay in language.

E. Results from the cognitive assessment indicate that overall, Freddie is in the ‘average’ range for verbal tasks, thus there is no clinically significant delay in cognitive development for verbal skills. His lower skills in performance tasks were due to slow speed and there are concerns about development of his fine and gross motor skills.

In addition, Freddie may have some difficulties with motor coordination and sensory processing and would benefit from seeing an occupational therapist.

9. Diagnosis:

Atypical Autism (DSM-IV)
10. Recommendations:

1. Freddie and his family will be offered sessions aimed at both promoting understanding and the effects of his difficulties, and skills in managing him.

2. It is recommended that Freddie be referred for an occupational therapy assessment which will assess his motor coordination and sensory processing difficulties and offer advice with their management.

3. Freddie would benefit from social skills training in school and from input in the school by Teacher Consultant for Autistic Spectrum Disorders.

4. It is recommended that Freddie’s parents closely liaise with educational psychology and special educational needs coordinators at Freddie’s school, to ensure that he receives sufficient additional support.

5. In school, Freddie would also do best in a structured work environment with clear and consistent expectations, pitched at an appropriate level for his ability, and positive behaviour targets, which are rewarded.

Oliver’s Assessment

Presenting Issues at Referral

Oliver is a 6 year old boy whose presenting issues at referral were concerns with social behaviour, noted by parents and school. Academically, he seemed able with his motor skills, language and hearing, but has extreme difficulty in dealing with unexpected changes or failure to complete tasks.

Other issues brought up were over-sensitivity to smells, over-sensitivity to noises, extreme reactions to disappointment or being told ‘no’, difficulties dealing with unexpected changes leading to crying and tantrums. Oliver also has problems with failure and is seen as being unable to speak up for himself if he is in trouble.

Family History
Oliver is the older of two children and his parents are A and A. His mom is an accountant and part-time child minder and his dad is in finance compliance. Oliver attends mainstream school entering year 2 in September 2007 and his sister (C) age 4 is currently attending nursery.

Parents described no major life events and all grandparents are well. There is no history of mental health issues in the family and Oliver’s parents describe C as being very different from Oliver.

Asperger’s Syndrome Diagnostic Interview (ASD-I)

Asperger’s Syndrome Diagnostic Interview is intended for use by clinicians well acquainted with Asperger’s Syndrome as an interview tool for parents. The information sourced from the parents or carer is rated.

Area 1 Severe Impairments in Reciprocal Social Interaction

Oliver’s parents reported that he is fine interacting with peers only if he is interested in the activity; if he is not interested, he will often walk away from the group or individual. He will not pretend to be interested and can appear rude on these occasions.

Oliver’s mom considers him to be popular and reports that he has a small circle of friends who share interests. He is not interested in girls.

Oliver’s parents have to take time to explicitly explain to Oliver how he needs to behave in certain situations. Sometimes, if a situation is subtly unusual, Oliver will not be able to change his behaviour accordingly.

Therefore, criteria met in Area 1.

Area 2 All Absorbing Narrow Interest Patterns

Oliver is a bright boy that is part of the gifted and talented group at school. He is an avid reader with a reading level above average and has a strong interest in numbers. Oliver’s mom describes him as being quite amenable to change in terms of interests and will not fuss when moving from one activity to another. There is evidence that he will not engage when the activity doesn’t interest him, therefore he is rated as having a narrow interest range.

Criteria met in Area 2.
**Area 3 Imposition of Routines, Rituals and Interests**

Oliver likes to sit at the same seat at the dinner table, he will get upset if he has to move, and he also became very distressed at a birthday party recently when he was given a gift instead of a gift bag, which is different from most parties. He likes to be in control and can be intolerant if someone else tries to be. He finds it very hard to fit in with other children sometimes because of his erratic behaviour.

Oliver is fussy with food; he doesn’t like ‘mushy’ sandwiches, won’t eat fruit as he dislikes the texture and has significant food allergies, which require him to have an epi-pen.

From the information sourced today, it would appear that the criteria for this area are met.

**Area 4 Speech and Language Peculiarities**

Oliver has a very good vocabulary and acquires language easily, but there is a big difference between his application of vocabulary between concrete facts and knowledge in contrast to his vocabulary surrounding emotions, which is lacking. For Oliver, humour is literal and based on puns. He can be very silly, which the family considers normal, as the family likes to make jokes.

Oliver doesn’t understand sarcasm.

On the basis of Oliver using different voices and lack of vocabulary around emotional states, criteria in this area are met.

**Area 5 Non Verbal Communication Problems**

Oliver doesn’t always show appropriate comfort to others when they are hurt and will sometimes laugh inappropriately.

He has a clear lack of gesture in his communication style. His vocabulary is very good, so his parents don’t feel he needs to supplement his talk with gesture. In terms of his gaze, his parents note that he will not look at you if he knows he has been naughty.

On the basis of Oliver laughing inappropriately on some occasions, criteria met in this area.

**Area 6 Motor Clumsiness**
Oliver is reported to be fidgety, will fiddle with his clothes and won’t sit still. This contrasts to where if he is really interested in something he will sit still for a long time.

Oliver is quite agile, runs well, but has a tendency to bump into things a lot and has only just learned how to ride a bike. His executive writing is poor in relation to his reading.

Not enough information to rank these criteria as met presently.

**Other Information**

Oliver’s parents report that he is sensitive to noise, light and does not like his clothes to get wet. Oliver has difficulties adapting to new situations far more than they have noticed in other children. He also likes taking thing apart to see how they work, which his parents considered unusual.

**Summary**

It would appear that Oliver meets criteria in 5 areas. His parents describe a discrepancy between his academic achievements and his insight into social situations and emotional understanding. He struggles to identify either his own feelings or those of others. Hypersensitivity to noise and difficulties with handwriting are associated with social communication disorder. It is becoming clearer as he progresses through school that he struggles to engage or maintain social interactions. He tends to lead and want children to play on his terms.

**Developmental and Medical History**

Parents report no significant events around Oliver’s early childhood, as well as no problems during pregnancy or birth. Hearing and vision have been checked, both are normal.

The only medical issue of note is anti-histamines for severe allergies and usual common antibiotics for childhood infections such as tonsillitis.

Oliver’s developmental milestones were within average limits and parents report that he is very attached to them as they have a strong relationship with their son.

Therefore nothing of significant note in Oliver’s early history.
School Feedback

School’s feedback indicated that Oliver has an advanced reading skill for his age and a great vocabulary. Despite this, he is reported to show difficulty in translating this to paper in activities such as writing extended sentences. Oliver is also above average in numeracy and is secure with facts, figures and science. He is described as being above average in general ability and level of attainment and very much above average on his reading level.

Oliver is described as displaying signs of difficulty in social relationships. At times, he can appear to ignore other children and says that he is not interested in what his peers are doing. Other times, he tries to join, but becomes agitated and vents his frustration through aggressive behaviour. He finds difficulty in appreciating other points of view and relies heavily on his friendship with one particular boy.

He is also described as finding it difficult to use expression in his voice. He understands punctuations, but doesn’t change the tone of his voice. When Oliver is interested in a topic, he will talk about it in great detail, sometimes when no one is listening. If he isn’t interested in a topic, he will stay silent and refuse to speak. Even though he understands humour, sometimes the teacher has to explain metaphors for him to fully accept them before he will understand the joke.

Oliver has a deep interest in computers and is very computer literate for his age. This is being used as a system of reward for good behaviour.

Oliver becomes engrossed in his activity and becomes unaware of the safety or feelings of other children.

Oliver is described as communicating more with adults and being very inquisitive, but when he becomes disengaged, he is described as becoming disruptive and ignoring teacher’s requests.

From school feedback, Oliver is described as not being in control of his temper and physically lashing out at other children. He is also currently playing with plug sockets, light switches and taps usually to try to understand how they work.

Overall, he is progressing well in many areas such as numeracy, science, ICT and reading. His fine motor skills are not progressing as quickly which makes writing hard work. Oliver’s difficulties with social relationships could lead to difficulties both at home and at school as this is starting to disrupt his learning opportunities.

Screening Questionnaires
**Social Communication Questionnaire**

Oliver has reached a total score of 7 on the Social Communication Questionnaire. Usually a score above 15 would indicate social communication difficulties.

**Strengths and Difficulties Questionnaire**

Oliver’s mother noted he had significant issues with overall stress, emotional distress, behavioural difficulties, hyperactivity and attention difficulties, kind and helpful behaviour. Slight difficulties were noted for getting along with other children.

Oliver’s teacher noted significant issues with overall stress, emotional distress, behavioural difficulties, difficulties getting along with other children, kind and helpful behaviour and the impact of these difficulties. Slight issues were noted for hyperactivity and attention.

**Short Sensory Profile**

Oliver is found to have definite difficulties in auditory filtering, visual and auditory sensitivity.

**THE AUTISM DIAGNOSTIC SCHEDULE**

The ADOS is an assessment of social interaction, communication, play and imaginative use of material to allow observation of behaviours associated with diagnosis of autism spectrum (or social communication) disorders.

The ADOS only takes into account communication and language and social and emotional reciprocity in its scoring.

The assessment findings should be viewed in conjunctions with other formal developmental assessments and less formal observations.

Oliver was assessed using module 3 of the ADOS.

When carrying out the ADOS, tasks had to be modified or repeated frequently due to Oliver’s behaviour. He would often try to alter the task, run around the room, turn the lights off and on or imitate different sounds.
Before the session started, Oliver noted he could smell meat; he was also tangential at times; going silent for several minutes.

Oliver was fascinated with the two way mirror and initially tried to lick it.

**Language and Communication**

Oliver used an adult style language for his age.

He used neologisms and idiosyncratic phrasing to describe things, like “happiness is like when your mouth is like a banana”.

Occasionally he would sound mechanical during phrases.

Oliver freely offered information about himself and reported events that occurred to him.

He never asked about the examiner’s thoughts nor did he shown interest in them.

Conversation was not reciprocal; Oliver was good at giving long discussion on topics from his own point of view.

Oliver used gestures after repeated prompting on some tasks.

**Reciprocal Social Interaction**

Oliver demonstrated unusual eye contact. For much of the assessment, he looked at his reflection in the mirror.

Oliver had exaggerated set of facial expressions.

When telling a story from a picture book, Oliver was able to recognize some emotions displayed. On direct questioning of his experiences of emotions, he appeared very uncomfortable and became fidgety.

Oliver showed little insight into typical social relationships such as friendship or marriage. He gave no further answer than friends were for playing with.

His social overturns were often inappropriate, coming too close to examiner or running around the room to get her attention.
Oliver showed some responsiveness to the examiner but it was limited.

The overall quality of the rapport was very one sided with Oliver attempting to modify or take control of most tasks. When the examiner tried to introduce other characters into Oliver’s narrative, he would tend to kill them off, taking them out of the story.

**Imagination**

Oliver showed imagination and creativity.

**Stereotyped Behaviours and Restricted Interests**

Oliver showed sensory behaviour during assessment. During make-believe play, Oliver put vehicles in his mouth, for example, when the examiner pretended a doll was hurt and needed an ambulance, Oliver, instead of developing that story, placed the ambulance in his mouth and waggled his head.

On one occasion Oliver repeatedly put his hand in his mouth and bit it.

There were no compulsions or rituals; Oliver was precise about how he wanted things

**Other Behaviours**

Oliver had trouble staying in his seat, often running around the room. He demonstrated some oppositional behaviour and required repeated instructions in order to complete tasks.

Oliver’s mood seemed to be cheerful, entertained or bored throughout the assessment. The behaviours may have been attempts to control the tasks and may have arisen from anxiety.

Communication – Oliver scored a total of 2 points which is on the autism spectrum cut-off.

Reciprocal Social Interaction – Oliver scored a total of 11 points which is above the autism cut-off.

Overall, Oliver’s score for communication and social interaction was within the autism range. Oliver clinically presented with features of Asperger’s Syndrome with his advanced vocabulary. He appears to enjoy interaction with adults around him, but it is one sided with Oliver only talking about topics that interest him and would change topics without the full context, making it hard to understand. At times, he licked the mirror and bit his own hand. His eye contact was unmodulated, much of the time he spent looking in the mirror. He was much more engaged when able to talk about his own subjects.
**Diagnostic Formulation**

Oliver is 6 years old and having issues with reciprocal social interaction with peers, all absorbing interest patterns, dealing with change, underlying comprehension and expressiveness of his voice.

On clinical observation Oliver presented with features of Asperger’s Syndrome with very advanced vocabulary. He enjoyed interaction with adults, but the conversation was very one sided, talking at length about his own interests.

At times, Oliver displayed licking and biting behaviours and his voice was at times squeaky and twice had a mechanical quality.

Oliver’s eye contact was unmodulated and he looked in the mirror at his own reflection most of the time. It was obvious that he became bored when talking about emotions and was more engaged when talking about his interests.

The Short Sensory Profile raised issues with auditory filtering and visual and auditory sensitivity which are consistent with the history of Oliver being sensitive to noise and as probably having some overall sensory processing issues.

**Recommendations**

Discuss report with parents and provide to GP, parents, school and file.

Included with this report is an early support series information for parents Autistic Spectrum Disorders that includes contact numbers.

Also included are Classroom Strategies for School and the parents will be referred to the Parents Educational/ASD Support Group run from within this service.

This report to be sent to educational psychologist as a means of referral with specific concerns around behaviour management in school.

Referral to OT service in the Neurodevelopmental Team regarding sensory and handwriting difficulties.
Appendix 20 - Summary of case study interviews

Case study analysis

A. Parents interview

1. Developmental history

Freddie’s Mother

Freddie is the first-born child and has two younger sisters. All of his developmental milestones were normal; he even spoke early. He walked when he was 12 months old and was very sociable. He was in the nursery at a very young age and always wanted to play with other kids. When he turned three, he started nursery and his mother said she couldn’t remember anything that concerned her or his teachers. When he was four, she got pregnant with her second child. It was at that time that someone from the nursery called her and said he noticed he did not sit with all the children; he was wandering around, going to the corner and reading books. Once he was diagnosed, she realized that in hindsight he would do things such as get very angry and bang his head against the car seat or become very tense and stretch his arms and legs as he cried. At the time, she believed this to be typical behaviour for a three year old.

Freddie suffers from Atypical autism PDD-NOS. His mother also indicated that there was not any particular life event that negatively affected him. She also noted that when he went to school at primary age, it was very easy steps and he not suffers any problems, such as separation anxiety.

Oliver’s mother

Oliver has only one sibling, a sister and she is 26 months younger than Oliver. As a child, Oliver was sitting early, by about five months, and crawling by about eight or nine months. He was walking at just about one year and all these things seemed normal. When Oliver was about 16 months, his mother did begin to wonder about his speech because he was not babbling much. However, when he became 18 or 19 months words started coming and coming. When he went to preschool, as far as intelligence, he was learning everything he was supposed to, but the playground was a problem. He was convinced that people were intentionally bumping him or hurting him and that is when she started to wonder. Oliver’s mother
also mentioned that Oliver would tease the other children thinking it was a game, and he would not know when to stop. She went on to say that during year two the teacher was noticing some odd behaviours that concerned her, mostly about how Oliver interacting with the other children. In addition, during school activities he would not sit on the mat and participate in-group activities; he hated being in a big group of people and singing or telling stories. Oliver’s mother also noticed Oliver had a sort of sensory overload. At the sound of a loud train, he would drop to the ground in a heap and cover his ears. She also stated that during the winter, with all the traffic fumes in the air, he would gag and vomit because of the smell. As he has gotten older, he has learned to control that urge. His mother also noted that she is concerned about his behaviour when he goes to visit other peoples’ houses. He tends not to understand that he has the same boundaries there that he has at his house.

As a baby, Oliver had very bad eczema. It was on his elbows, behind his knees, and on his cheeks. Once he was on solid food, they also discovered that he had food allergies. The food allergies cause itching and swelling and have expanded to more foods as he has gotten older. Oliver’s mother said she believes he fears sitting next to people who are eating food that he is allergic to so she is doing what she can to break him of that. Oliver’s mother stated that at one point, he was the victim of bullying, but she did not draw it out to seem that this was an experience that left a negative impact on him.

When describing what it was like when Oliver entered school, his mother said that when he was really little she tried to put him in the crèche at the gym and he would cry until he vomited and they would have to come get her. He was fine as long as she was in the room, but once she left, he could not deal with it. At that time, the only person she could leave him with was her mother or her friend who had a daughter that was an age similar to Oliver. Just before his sister was born, she decided to try to send him to a playgroup two mornings a week. He went with his friend and he seemed to be fine. Once he turned, three they increased the playgroup to three days a week. When it came time for school the increase from three to five days, it had been so gradual he did not have a problem with it; however, he did become tired more quickly and needed more sleep.

2. Family Life

Freddie’s Mother

Freddie lives at home with his mother, father, and two younger sisters. His mother is a part time computer programmer and his father is a journalist. Neither of his sisters have difficulties similar to Freddie’s.
Freddie enjoys reading very much; he enjoys to read comedies, humour, and joke books. He also enjoys playing computer games and his favourite subject is history.

Freddie’s mother’s background is in social work so she studied many subjects about children’s education and psychology. She said that because he is her first child she was always contributing to him and teaching him. She added that she is very relaxed with him. She uses charts and stickers to praise him. Every month she tries to him a new behaviour. She praises him for small steps that are handled correctly, such as answering the telephone.

Oliver’s Mother

Oliver lives in the house with his mother, father, and sister. No one in the house with similar problems. Oliver’s mother had experience in accounting and works as a child minder. Oliver’s mother indicated that one of Oliver’s favourite activities is to read. Other children have even commented to her that he will sit by himself on the playground and just read. He also likes to spend long time doing computer games but she is controlling this recently.

Oliver’s mother described her parenting style as both praising and punishment. She stated that he does not like to be praised, but she does it anyway. When his parents praise him he looks at them like, “yeah, okay,” but they continue to do it anyway. When it comes to punishment she said she tries to talk to him first to be certain he understands why a punishment is being implemented. She also noted that he will push boundaries so they need to be very strict with where the lines are drawn as well as holding to the punishment. When she was asked if she would do anything differently she said sometimes she wished she had more time to think about a punishment that fits the crime or she had time to talk to her husband about how to react. Her main comment was that she feels as though sometimes she may overreact, but that usually happens after a series of incidents. She went on to say that the punishment is not the most important thing, but rather the talking. It helps her to understand him and it helps Oliver to understand what acceptable behaviour is.

3. Diagnosis

Freddie’s Mother
Freddie suffers from Atypical autism PDD-NOS. His diagnosis happened when they came to London, but not right away. It was in the beginning of year four and it was as if moving to London triggered all the problems; it is as if he is a very different child. Freddie’s mother said that the special education needs teacher called her and said she thinks that Freddie has autism. Freddie’s mother told the teacher that she does not know him and did not do a proper diagnosis and she should be able to see that he is normal. Once he was compared to other children, she began to see that he might have a problem so they took him to the GP with a referral letter and five months later, he was diagnosed. When the diagnosis came, it was atypical autism, pervasive development disorder not otherwise specified. She said that it hurt her feelings a lot to know that her first child would suffer for a very long time. He sees the special education needs teacher for occupational therapy training because she has given him something for his fingers because he has difficulties using a pencil or pen to write.

When she received the information, she said she of course immediately shared it with her husband who was very involved and supportive. Aside from her husband, she did not share the diagnosis with any of her friends or family. Freddie’s mother said that he does not know exactly what he has. She did bring him brochures to explain why that he goes to a special teacher or has delays because he has special needs, but he refused to see himself as different from anybody. Freddie is in a normal school and his academic marks are very high; he has straight A’s. He continues to do well in school, enjoys reading very much, and always does his homework. Freddie’s mother said she is concerned about the changes that are coming and about Freddie moving into high school. She is also concerned about the requirements for the exams, the GCSE, and the pressure put on Freddie to socialize.

Oliver’s Mother

Oliver is diagnosed as having Asperger’s syndrome, food allergies, and asthma. The food allergies were discovered as a baby when he began eating solid food. Oliver’s mother said that the Asperger’s syndrome was first noticed by a combination of herself and Oliver’s teacher. The teacher told his mother that she was worried to talk to her because she did not want to upset her, but in reality, Oliver’s mother had noticed things too. She had even filled out an online questionnaire about his behaviour, but it came out borderline so she thought she had nothing to worry about. When Oliver was six and a half, the teacher and his mother each wrote a letter for Oliver’s mother to present to the doctor to address her concerns about his behaviour. The doctor referred her to NHS mental health. The school also provided a questionnaire that was completed by the teacher. At the first meeting, where Oliver’s mother and her husband were present, they said they needed to go through it and score everything properly, but they were sure it was
Asperger’s. At that point, they sent the parents away with reading material and another appointment in a month. His mother said she felt gutted by the news. They did not make any of the appointments because the scheduling was off.

Oliver’s mother shared the diagnosis with all of the family. She went on to say that her mum spent a lot of time in denial; however, as Oliver gets older it is easier to see the differences. Some of her friends know as well. She has told some other children’s parents and they have said they do not notice. Oliver’s mother said that at first Oliver knew he had special needs, but she did not put a label on it for him until two years after he was diagnosed. An incident involved extreme bullying. In the situation the bully had a sibling who was killed by someone who had also been diagnosed as having Asperger’s. The child who was bullying Oliver was actually the one who told Oliver that he had Asperger’s. Oliver’s mother also indicated that she told him and the only reason she did so was that he was being bullied. Oliver’s mother noted that she worries about going to high school and knowing what is the right one for him.
4. **Descriptions**

Freddie’s Mother

Freddie’s mother said there are not specifics to Freddie’s daily routine. It is just like any other child’s routine. Normal daily routine, after homework he plays on the laptop or watch TV. He will occasionally play with his sisters. Freddie’s mother said he has difficulties when change happens. For example, if they are planning to go somewhere and she changes her mind he will refuse and struggle and complain while everyone else will be very easy going and accept he changes. She has learned to adapt herself to making a schedule for him to follow. She makes sure to give him advance notice if anything on the schedule changes and she also provides him with a list of possible new places they may travel.

Freddie’s mother said he has a very good relationship with her and his father. He is very respectful of both of them. He adores his baby sister very much and treats her as a baby. He tries to take good cares of her but his hands are very weak so he has a hard time picking her up. She also said that sometimes there is a bit of tension between Freddie and his older sister and they will fight together. When she was asked to describe his communication skills with others, his mother said that at a young age most of his relationships and friendships were parent organized; if the parents wanted to visit one another the children would visit as well. He will approach other children and try to play with them properly. All of the boys in school used to tease him because if they could find something that annoyed him he was very easily angered. He would run and they would chase him until he got tired. This was very stressful for him.

When Freddie’s mother was asked to describe his social skills, strengths, and difficulties, she said he is very polite and have good scene of humour but he does not want to play with people in school because it is okay to be alone and read. He does say that he feels lonely and he does not know how to make relationships and he cannot approach the other children. She went on to say that he feels as though no matter what he does they laugh at him and make him into a big joke. She also said that there are some friends from back home that he could communicate with. They have his email and his instant messenger name so they could send each other letters however, her refuses, saying if they cannot see each other, what is the point. He does the same with his school relationships. She said he systemizes them and the people he meets at school he should only see at school. This makes it very hard for him to invite them home. She said that putting his friendship in order makes it hard to do any other activity with them other
than computer games. She believes that more stress and problems such as accepting change isolate him and those factors increase his difficulties.

**Oliver’s Mother**

Oliver’s mother said that he liked following the daily routine and need to inform him before applying any change. When Oliver’s sister was young, he would ask to have sleep in his bedroom. His mother believed he wanted the company. She went on to say that they became either best friends or worst enemies. She said they play and get on because he wants company. She has learned to become forceful and try to override his ideas or make him compromise on what they play. She added that he does not compromise very well and so she will say fine and walk away. When it comes to his relationship with her and his father she said that they have very similar personalities and they clash a lot. She has learned to calm down and talk to him more. When Oliver’s mother responded to the question about his social communications with others she said that he does not like going to other people’s houses very much because he is uncomfortable with unfamiliar territory; he is not sure how to act. He is polite and will initiate a conversation but he does not know where the boundaries are. She added that he is withdrawn from other children in school and does not like to play with them and prefer reading. In social communications with other adults he does not know, he acts very erratic, sometimes silly. His mother even commented that she had never seen his behaviour so bad. Additionally, when Oliver is in larger groups his differences are more pronounced. Further, when he is able to see someone’s emotions, such as understand that they are sad, he does not know what to do. He may just stand there and stare. She said she feels that this must have an impact on his relationships with others because they do not understand him. Others may become upset because they feel he does not respond appropriately. In reality he is frightened of saying the wrong thing so he does not say anything at all.
5. **Causes**

**Freddie’s Mother**

When Freddie’s mother was asked what she sees as the cause of these difficulties she replies by saying that she believes he needs to care about other people as well. She does not see him asking other people to do other things that may interest them. It is hard for him to speak to someone by phone and invite them over. He never asks although she encourages him to. She added that she put all of his phone numbers in a little phone book for him, but he still lost all contact with his friends from where he previously lived. She said that she believes the difficulties could be lessened if she was more aware of the autism at an earlier age. That way he could have gotten the proper support from his parents, teachers, and schools. He only receives extra support once a week when he does OT. She went on to say, “What about his other needs?”

**Oliver’s Mother**

When Oliver’s mother was asked what she sees as the cause of the difficulties, she said that the days at school when they actually have active interventions, he is much happier. One day they have intervention in the IT suite and he loves computer so that makes him very happy. On another occasion, sports teacher comes and they play sports as group and in another day teacher assistant stay with Oliver during lunch and do one to one activities. Oliver also used to be in a group that met on Friday, but it is no longer a group, only Oliver. She felt as though, when it was a group, it was beneficial because the other children were able to understand how he thought. She went on to say that, she feels the school could provide some kind of buddy system in the playground, but she understands that you cannot force another child to do that if they do not want to.

6. **Social-Emotional Interaction**

**Freddie’s Mother**

When Freddie’s mother was asked if he expresses feelings she said that he does if he is happy or angry but there is not much to his facial expressions. When he was younger, he had normal facial expressions, but now he fakes it and when he is angry he exaggerates his expressions and he will stomp his feet and
make grouching noises. He does not have barriers to express his anger so when he is angry he thinks that it is okay to shout or kick her. It usually only happens when he is stressed or overstimulated. When his mother was asked about his ability to understand her feelings or the feelings of peers, she responded by saying that she thinks it is a barrier because she notices that when a friend come over and asks if he wants to stop what they are doing and go in the garden and play he does not see the excitement on her face. He will think why not continue what we are doing and she will be disappointed. If Freddie realizes that a member of his family is ill or sad, he will be very kind. She also said that if he sees that she is sad, he will ask if she is alright. If his sister is upset he will try to make her happy by cracking silly jokes or acting funny. She went on to say that most of the time she does have to direct his attention to others’ feelings. He does respect others’ feelings when he knows they are ill or sad.

Freddie’s mother said he never starts a conversation with any child. Sometimes he will start a conversation with her, but she has not seen him start a conversation with another adult. She said that when she has friends over he will go up and greet them but that is only because of years of practice. She taught him the basic social skills like greeting and looking into people’s eyes but, then he immediately leaves the room and returns to his computer. When she was asked what Freddie is afraid of, she replied that he is afraid of the dark and of spiders.

In response to the question about his relationship with his friends, his mother said she feels as though it is one sided. He speaks to them about all the things he likes but that have limited his friends to only one. She said that Freddie will not say he wants to go visit his friends. He never seeks to have friendships or asks for friends. She also made him a little phone book of his friends’ numbers, but he does not call.

Oliver’s Mother

When Oliver’s mother was asked if her son expressed how he feels she responded, by saying he exaggerate emotions but does not shoe complex emotions; his emotions are quite simplistic. He is happy, sad, angry, actually degrees of angry. He is starting to show excited, but that is about it. The way he shows them, they do not gradually change, he is one extreme or the other. She went on to say that he does not tell her if his feelings have been hurt, he internalizes it and she may hear about it several weeks later. He does not tell anyone because he does not want to relive the experiences. Oliver’s mother said that she does not believe he can read others’ feelings very well unless they are very exaggerated. He does not pick up the signals. He cannot listen to you and look at you at the same time. The words and the body language
get confusing for him and make it difficult for him to concentrate. She said that she can mime at home and he has a good idea of what she is saying by reading her body language alone. He may understand when someone is sad, but he will just stand there and look lost. He does not know how to react to it. When it comes to reacting to another child’s negative emotions, he will probably not sympathize because he does not know how to. He may understand that if you bump into something you hurt yourself, but he does not know well enough to go and give a hug. It is clear that he understands but he does not know the appropriate response.

Oliver’s mother did not indicate that he has any problem starting or carrying on a conversation with her. She said he is very chatty and sometimes begins talking and just does not stop. However, when it comes to adults he does not know, the interaction is quite different. She described two situations in which he was being evaluated and did not know the evaluator. Because he was uncomfortable with the evaluator his behaviour was erratic and he acted out. With one evaluator, she said she had never seen his behaviour so poor in his life and she was embarrassed. With the other evaluator, she said he was so uncomfortable he acted silly and make silly voices the whole time. He does not know how to act properly with strangers.

Oliver’s mother said that he does have friends and out of school in a one on one situation they are fine, however he does have problems in groups. She goes on to say that he does want to be social and he frequently asks her if he can have friends visit. He knows that when he starts a conversation it needs to be about something they both have an interest in, however he does not understand how to look for cues to stop a conversation. She added that she does not believe he knows when others lose interest and needs to be told, which is a surprise to him.
7. Impact

Freddie’s Mother

When Freddie’s mother was asked about the impact of his delay at home and school, she said that she feels as though this has greatly impacted him at school. He tries to stay by himself and he does not interact with others; he is not learning social skills. He will never develop communication skills and once he gets to high school the communication gap will only get bigger. At home it affects the familial relationship. Family time is stressful and it takes a lot of convincing to get him to go out into the garden or sit with them in the living room. Often, he misses family time and spends it on the laptop. She said this worries her very much. She said that Freddie refuses to believe that he is different than the other children. The emotional and social delays will affect Freddie’s relationship with others. When he becomes a teenager, it may be associated with depression, anxiety, and struggling to fit in. She added that she is worried and feels trapped because there is nothing she can do to help his future.

When Freddie’s mother was asked if he has experienced bullying, she replied by saying that he feels that he has not been accepted by children and they continue to bully him. She added that he always asks why they hate him and how he can stop it because he feels as though he is doing his best. The children make fun of his English accent or him liking to read so much.

Oliver’s Mother

When Oliver’s mother was asked about the impact of Oliver’s social delay at home and school, she said that she is concerned because others do not understand that he does not know how to respond appropriately to other’s behaviours and she feels this may hinder his ability to communicate socially. She added that this is not an issue at home because they see it every day and know how he reacts in situations like this. At home, initially, it was a problem, but as she has learned to understand him better it is not so much of a problem anymore. When it comes to learning, academically, he is doing fine. He may have a problem if he is very upset or hurt which will cause him to be withdrawn to the extent that he does not focus.

Oliver’s mother described a time from several years ago when Oliver was bullied. There was an incident that involved extreme bullying. In the situation the bully had a sibling who was killed by someone who had also been diagnosed as having Asperger’s. She said there were incidents where he had been hurt, things had been said to him, really hurtful things, he had been punched and hit and at first she did not connect all the incidents until at one point she started to write them all down. Then she was able to see
that it was all the same children. She went on to say that she went to the school with a list and said she needed to talk about it. Although each incident had been reported, the tracking system kept it all separately in different children’s files. On each occasion the child had to do a mediation where they talked to someone about bullying, but it was not working. The boys had to be kept separate. She added that Oliver now does a lot of anger management exercises at home and with the teaching assistant and he is learning to better cope with his anger. He is now self-aware and knows that he can go ask for help or remove himself from the situation and go to a safe place. She went on to say the issues seem to be resolved, but it has been a long, slow process.
8. Intervention

Freddie’s Mother

When Freddie’s mother was asked what opportunities she has to discuss her concerns, she stated that she does not feel as though there was any school provided intervention to support him that aside from the OT. She said they did make two or three sessions where he sat down with other children and talked about things like greeting and bullying. She added that she does not feel as if these were enough. He needs to learn social skills, how to understand people, and how to react to different emotions. He can be very affectionate when he connects with people. She said she feels as though the school does not educate the parents on the support that is available. She does receive support from her husband; he has been helpful all along. She also said there is support from the teacher. The most useful strategy to overcome the difficulties is to be very specific with Freddie. The teacher he currently has will come to him and say open your book and he will tell him specifically what he needs to do. When asked about that helped to improve Freddie’s social skills, she simply said there is a lack of attention to developing his social skills.

Oliver’s Mother

Oliver’s mother said that she has discussed her concerns about bullying with the staff at the school and they have changed the anti-bullying policies because of it. They pointed out that the old policies did not quite work and there were inconsistencies in it. She gained a lot of her information from reading several different books. One of them was a book about Asperger’s and bullying and she said it really makes her look at how the children interact with each other and whether or not what they are doing is acceptable. Oliver’s mother seemed to believe that the most useful strategy to overcome his difficulties was just to continue to understand him and work with him to define boundaries and set limits. She seemed to think that working with him at home to control his anger was helpful and she felt that the structured programs at the school were helpful. She went on to say that, she has and IEP review next week and she does not feel that what they are doing is enough.

9. Services to Support Child and Family

Freddie’s Mother

Freddie attends west London school. At the school, he is offered outreach service where he joins student from special school. He also sees the special education teacher for Occupational training. Freddie is
currently on School Action Plan Plus. She said that she only realised a few months ago that children who need special help in school need to have statement and collect evidence that he is not doing well or understanding. She feels as though there was a lack of support to educate the parents about getting statement. The level of support he receives in school is not enough. She has spoken with people and asked that they offer support from outside of school and perhaps hire experts help the children. All children need to be taught these skills, not just those with autism.

Oliver’s Mother

Oliver attends west London school. At school, he is offered support services during lunch periods. The teacher assistant takes him to do structured activities that allow him to play and learn at the same time. Oliver is currently on School Action Plan Plus now and his mother said she has fought every little bit of it along the way because she does not feel it is working. She said they have an IEP review next week because she wants to try to get him statemented before he goes to high school. She added that she is going in “all guns blazing” next week to pull their IEP to pieces and to suggest things because what they are doing is not enough. She wants them to understand that what is happening on the playground is reflecting how he reacts in the classroom and is affecting his education and possibly the education of others around him because he is being disruptive.

Oliver’s mother indicated that she did take a National Autistic Course for anger management and she said that it was nice to meet with other parents who have children with problems similar to her own. When asked about mental health services she replied that she went to GP and they referred her to NHS Mental Health who sent her a letter saying they did not think it was appropriate so they referred her to a safe team who did an assessment and referred her back to a clinical psychologist; she is going around in circles. When the educational psychologist did the assessment, she took him out of the class to a quiet place and did not assess him in a group setting. His mother disagreed with this and said that the assessment needs to be done in a group setting because that is where the problems are.

B. Teacher Interviews

The teacher interviews were broken down into five sections and will be formatted as such. The sections are perception, causes, diagnosis, and impact in social/emotional life and intervention. Perception covered with six questions, diagnosis is covered with three questions, a cause is covered with two questions,
impact in social/emotional life is covered with 12 questions and intervention is covered with five questions.

1. Perception

Freddie’s Teacher

Freddie’s teacher and other teachers at the school noticed him having difficulty fitting in with other students and following school rules when he first enrolled in the school. Though he started out as a popular student, his teacher noticed his popularity decreasing as students began to notice some of his actions as different or odd.

While Freddie’s teacher believes that he is very intelligent, she found that he lacks the social skills needed to start a conversation. Freddie’s teacher describes Freddie as passionate about reading, a fast reader with comprehension, and very smart. He has exceptional performance in all subjects and she expects him to exceed his target level in English and science. Freddie’s teacher does not currently have any other students with the same difficulties.

Freddie and his teacher’s main target in the IEP is for Freddie to successfully transfer to High School and for him become comfortable asking for help when required.

Oliver’s Teacher

Oliver’s teacher first became concerned while he was in reception, she has experience with autistic children and noticed that his behaviour was different from the other children. She noticed that he was very intelligent, but some of his mannerisms were “slightly odd.” She also noticed that his behaviour with the other children was unusual and that he tended to isolate himself rather than play with his classmates. Oliver’s teacher describes his academic progress as normal, and she does not believe that his difficulties in his social skills and understanding feelings affect his progress. Regarding his IEP, Oliver’s teacher said that he does not currently have any educational targets because he is “quite bright” aside but have handwriting target.
2. Diagnosis

Freddie’s Teacher

Freddie’s parents informed his teacher of his diagnosis. She was not surprised as she has experience working with students that have Asperger’s Syndrome and thought Freddie may have it as well.

Oliver’s Teacher

Oliver’s teacher did not state that he has formally been diagnosed. She states that she and other teachers noticed that he was “a little different” from the other children in year one, but it is quite difficult to diagnose a child that is so young. She was able to recognise signs of Asperger’s in Oliver from her previous experience working with children that had been diagnosed.

3. Impact in Social/Emotional Life

Freddie’s Teacher

According to his teacher, Freddie prefers to interact with adults. He does not spend much time interacting with his peers. She describes Freddie as generally very kind to everybody. He tries to respond to anyone who wants to interact with him, and his always making jokes.

Freddie’s teacher believes that he lacks the skills needed to start a conversation or initiate games with other children; therefore, he struggles in social interaction.

In regard to Freddie’s ability to understand his teacher’s feeling or the feelings of his peers, his teacher believes that he lacks the ability to properly interpret tone of voice. He may confuse sarcasm with compliment, or may not recognize a compliment when one is given.

Freddie’s teacher does not believe that his behaviour directly affects her teaching. She does state that she needs to do extra work a few times a week to incorporate strategies for new activities.

Oliver’s Teacher
Socially, Oliver’s teacher feels that he is capable of having a conversation, but it is very one sided. She also finds that he is better at interacting with adults than with his peers. He enjoys adult conversation and the attention he receives from adults. Oliver’s teacher describes her relationship with Oliver as “really good.” She believes that he feels comfortable speaking with her about any problems he is experiencing.

When asked about Oliver’s ability to express his feelings, Oliver’s teacher describes him as “over dramatic.” She also describes an instance where Oliver displayed an inappropriate response to a sad story; he giggled and did not comprehend why other children were crying. Oliver’s teacher believes that he says inappropriate things to other children that upset them, but he does not fully understand his actions. Oliver’s teacher believes that his difficulties occasionally cause other children to avoid interaction with him. She finds that some of the children cannot cope with Oliver needing so much attention.

Oliver’s teacher found that his attention during lessons is improving and she feels that he is less distracted.

4. Intervention

Freddie’s Teacher

Freddie’s teacher reported her concerns to the SENCO in order to give him support. Freddie’s teacher did not mention any additional social skills training that he has received. Once or twice a week, Freddie goes to the special education needs teacher for occupational therapy and to be trained in fine motor skills. Freddie’s teacher has found that the therapy has not improved his ability to write, but it has improved his capability with holding scissors.

Freddie’s teacher has developed a strategy to accommodate his learning and behaviour. She has developed a secret gesture that reminds him to open his book and work on the assigned tasks. This keeps Freddie from daydreaming and avoids the embarrassment of being constantly reminded to stay on task in front of his classmates.

Oliver’s Teacher

Oliver’s teacher has had conversations with his mother to express her concerns about his interactions with other children.
For the past two years, Oliver’s teacher has been providing one to one social training to him during every lunch. She meets him and provides structured activities to play and learn. She incorporates drama in the sessions with tasks such as creative writing, as these things interest him and assist him with relating to the task, and Oliver enjoys participating in the dramas. She also tries to incorporate anger management in his programme. Oliver’s teacher has found that it is useful to incorporate extreme scenarios when assisting Oliver. The activities could be talking about anger issues, playing sports out door or sitting in the computer room. The purpose is that Oliver cannot cope with noise and large groups at lunch period. She states that she has to vary her strategies based on Oliver’s mood, so she guides the training based on what Oliver wishes to talk about that day.

C. Children Interviews

The children’s interviews took place after the children got to know the researcher. The children’s interviews were broken down into three sections and will be formatted as such. The sections are: home life, school life and intervention, and child’s strengths and weaknesses in emotional/social understanding. Home life is covered with five questions. School life and intervention is composed of nine questions, and child’s strengths and weaknesses in emotional/social understanding are covered with eight questions.

1. Home Life

Freddie

When Freddie was asked what he likes to do at home, he responded that he likes to play computer games as well as play with his sister, although she is not always nice to him so he does not get to spend much time with her. She may stay and play for as short amount of time, but they do not have much in common so interaction is brief. Freddie went on to say that he does enjoy to have friends over to play, although he does not always have time for these interactions because he has so much homework. He has not spent much time at friends’ houses lately because he has been inviting lots of people over to his house; occasionally his mother will invited friends over without his knowledge, and he will come home not expecting to have a friend there.

Freddie went on to say that sometimes he can decipher the feelings of his mother and sister, but sometimes he cannot. His sister may become very straight faced and act like he is not there which makes it hard for him to tell how she is feeling. Other times they go into the garden and jump around and all of
his stress is alleviated. In regards to his mother, he also said sometimes he does and sometimes he does not know when she is sad, but if she is sad he can comfort her if it is his fault she is sad. When he was asked how he lets his family knows how he feels he said that he sometimes tells his mother but she does not do anything about it.

**Oliver**

When Oliver was asked what he likes to do at home, he responded that he likes to play computer games and read. When he was asked if he plays with anyone at home he replied that he will usually play with his sister. He went on to say that she will usually play very well, until she starts losing, which happens most of the time. At that time, she pretends not to know the rules and this annoys Oliver. He also said he would play with his mum or dad, whoever is home.

Oliver went on to say that he can mostly tell when someone else in the house is feeling upset and he can always tell when they are feeling sad. He can tell when his sister is upset because of her body language He went on to say that if she is upset, sad, and angry he would feel either happy or sad; he would feel happy if she were upset because he had annoyed her, but he would feel sad if she will not play with him. Oliver commented that if he physically hurt her a little bit while they were playing rough, it does not matter but if he hurts her too bad he feels sad. When Oliver was asked if he can let his family know how he feels, he stated that most of the time he can tell his parents how he feels, however sometimes he does not because they might be frightened.

2. *School Life and Intervention*

**Freddie**

During playtime, Freddie likes to go on the new equipment and play with his friends. Lately, his “friend” that are mean have been out sick so he has had time to play with his nice friends. He also enjoys reading during playtime and although the teacher would rather Freddie did not, he will allow him to get a book from the library when he is not in the mood to talk to anyone. Freddie stated that he has three friends, two that are mean and one that is always helpful, but that he also does not play with. He does not recall staring a conversation in order to make friends. He started at a new school and joined a club to learn a new language. Every day the teacher made him switch seats until he sat next to someone he got along with very well. He sat next to a girl and did not initiate conversation; she asked a question and was very
helpful. Freddie went on to say that he is able to tell his friends how he feels, however he can hide his emotions whenever he wants. He does so by thinking happy thoughts so that his friends do not think differently about him.

His favourite subjects are English, history, and ICT. Freddy does receive additional support through the school. He said that he is sent out to do handwriting because he is very bad at it. He has also received additional support for ‘people that cannot help themselves with their problems’ on a couple of Fridays.

Oliver

During playtime, Oliver said the things he likes to do vary. On this particular day, he played a physically active game with two other girls. He indicated that he enjoys playing or sitting in the shade and writing stories. He also noted that he enjoys to read, but is only allowed to do that on Thursdays. When Freddie was asked if he had friends in school he responded by saying, “Yes, loads.” He then named three friends and said that he has others but that is all he can think of. He said he has no problem interacting with his friends. When asked how he can let his friends know how he feels, he responded by saying that he does not discuss his feelings with his friends because they would think he is weird. He elaborates on that by saying that children do not usually talk about their feelings.

Although Oliver was never directly asked if other children ask him to play with them, there was a conversation about sports during which Oliver stated that he enjoys sports where people throw the ball at you and you have to hit it, but he dislikes games that involve passing because no one seems to pass him the ball. His favourite subjects are science, English and ICT. Oliver stated that he receives support for all lunch times. On Monday, he goes on the computer in the ICT room. On Tuesday, he eats lunch in the hut, sometimes he plays games with other people, and sometimes it is just him. On Wednesday, he plays sports but does not eat lunch in the hut.
3. Child’s Strengths and Weaknesses in Emotional/Social Understanding

Freddie

When Freddie was asked how he responds when someone close to him feels unhappy or hurt he said he is shocked and he will run right over and see what happened. He went on to describe a situation where a friend to hurt and he was the first one to attend to him. Shortly after, others noticed and a crowd started to collect around him so the child left to go to welfare. When he was asked what makes him sad Freddie replied, “When my friends are upset.” He went on to say when people start to scare you and at first you get shocked and when you get sad they you get angry and your emotions change very quickly. He also said that the same things that make him feel angry also make him feel sad. As an example he noted when someone is mean to him or his friends. Freddie also said that everything that goes on with his sister makes him feel angry, and although she is able to deal with those problems, he is not. In order to better the situation, he tries to offer her stuff and be nice.

Freddie stated that if he feels sad, he tries to think happy thoughts. He went on to say that he is happy when he gets picked for what he wants to get picked for. He elaborated by saying that he is happy to get into a club or a new game. When Freddie is confronted with a problem at school he goes to the peer mediators, who are people who are supposed to help with the problems, but they are not usually on the job. When he has trouble contacting them, he goes to the teachers. He said that when he does this, sometimes it gets better and sometimes it does not. Earlier in the conversation, Freddie mentioned that if he is bullied he tells the bullies to go away and they will stop for a little while, but they come back. When they come back he just ignores them. When Freddie was asked what he would do if a particular person wants to play with him and he does not like him/her, he responded that he has not been in that situation yet. He went on to say that he may just join in a game and be nice, however if it is a popular game and it turns into a large crowd he will leave.

Oliver

When Oliver is asked if he can tell if someone is feeling sad, he comments that he can always tell when someone is feeling sad. He goes on to say that he can always tell when Charlotte is upset because she gets in a hump. When it comes to his friends he says he can quite often tell how they are feeling, but they are not good at hiding their feelings. Oliver is then asked if he can see emotions on his friends’ faces after they lose a game or have an argument. His response is, “Usually, unless they are not showing, it gets confusing.” When he is asked about what upsets him he responds by saying things such as sad pain, the
sort that happens when someone dies. He also said that not getting along with his sister does not upset him, but just annoys him. Adding that he knows that being upset and annoyed (an angry feeling) are two completely different things. When he was asked what makes him angry, he responded by saying, “My sister.” Later in the conversation, Oliver said that he feels sad when he is bored and when Charlotte goes into a huff and does not play with him.

When Oliver was asked how he controls his temper he said that he honestly does not know. It is so far stuck in his head he does not know how to do it, he just does it. In order to make himself happy, he may think of something else, play a game, or talk to a friend. He said that he tries to redirect his mind to something else, but finds that his mind may be arguing with itself by thinking about something he is trying not to think about. He gave the example if you are trying not to think about pigs, but you think of potatoes, then sausages, then bacon, and then pigs. When Oliver was asked what he does when someone he does not like asks to play with him he replied by saying that he likes everyone. The interviewer mentioned someone that Oliver had earlier said he did not like to be with and Oliver responded by saying that he does not mind playing with him, but he does not want to be his friend. Next Oliver was asked what he would say if the child came to him and said he wanted to play. Oliver responded by stating that he would say no thanks and run away, however, he would not tell him how he felt because he does not want to hurt his feelings.
Appendix 21 - After the Intervention

1. Parents’ Follow up Interview:

Freddie’s Mother

Freddie’s mother found him to have more interest in meeting his friends after completing the sessions. He still seems more interested in computer games than interacting with his family, but has taken some time to teach his sister how to play computer games with him. Freddie’s mother has noticed that he now listens and follows suggestions when interacting with his friends. In terms of initiating and maintaining friends, Freddie has gone over to his friend’s house to play and has been invited from Oliver from this group, as well as asked his mother to invite friends over to his house.

When asked about expressing his feelings, Freddie’s mother finds that he is not easily angered. After the sessions, he remained stubborn, but he has learned to go to his room before “exploding” when he is angry.

Freddie’s mother has always found him to be considerate of others’ feelings, but after the intervention, she noticed that he gave more attention to others’ faces and maintaining eye contact. She has also found him to have more interest in looking at her and trying to understand her emotions, she then gave example of one time she was feeling exciting and noticed him looking at her and realising it.

Freddie’s mother believes that the intervention gave Freddie a sense of calmness in his personality and his interactions with his family. She has also noticed an increased interest in spending time with his friends.

Oliver’s Mother

After the intervention, Oliver’s mother noticed that he displayed more control over his anger. Oliver has also learned to ask for help and is getting along better with his sister. Oliver’s mother has also noticed an increase in his interaction with new friends. Oliver is initiating and maintaining relationships by asking his mother to invite his friends over to play, noticing him speaking to his friends at school. Oliver’s mother has noticed that he seems more accepting of some of his classmate’s invitations to play with them, and he has told her that he has been eating lunch with his classmates as well.
Oliver’s mother has found him to be using emotion words to express his feelings more than he was prior to his participation in the sessions, words such as content and proud. His ability to read others emotions is also improving. He is now able to realize when his sister is upset and change his actions accordingly.

Oliver’s mother believes that the intervention programme has definitely had a positive impact on Oliver. Since the intervention, she has noticed more stability in Oliver’s relationships with his friends at school.

2. Teachers’ Follow up Interview

Freddie’s Teacher

After the intervention, Freddie’s teacher noticed that he spends playtime reading on his own, and does not engage in conversation with other students. Freddie’s teacher has seen improvement when he participates in-group work. She feels that he sees himself as part of the team now and notices him listening to others and waiting until the appropriate time to respond.

Freddie’s teacher believes that his new social skills have given him the ability to stand up against bullying. She also finds that he is happy to interact with someone when he suggests it to him.

Since the intervention, Freddie’s teacher has noticed that he has become more open about his feelings, and more aware of the jokes made by other students. When bullied, Freddie raised his voice to the other children, but his teacher views this as an improvement in his ability to express his feelings and stand up for himself.

Freddie’s teacher has found that his ability to understand her emotions depends on how clear she is and whether or not she explains them. She does believe that he can now differentiate between joking and sarcasm.

Oliver’s Teacher

Oliver’s teacher noticed that after the intervention he is spending more time with other boys and girls. According to his teacher, Oliver does not seem to mind group work as long as the rules are clear to him and everybody is following them. When the rules are not being followed during group activities he now raises his hand and informs the teacher rather than getting angry.

Oliver’s teacher believes that his new skills have helped him to realize that he has to make an effort to interact with other students or they are not going to interact with him.
In regard to expressing his emotions, Oliver’s teacher has noticed that he does not lose his temper as much and has calmed down quite a bit since the intervention. Oliver has developed the ability to notice when others are upset by their facial expressions. Oliver’s teacher has noticed that he tries to control his anger because he now realizes that it upsets people around him.

3. Children’s Follow up Interview:

Freddie

From his participation in the intervention session Freddie has learned to try to keep his emotions positive, and not to fight or be rude to others. He has also learned that knowing the different from angry and sad and other emotions make him know what his friends feel. Freddie believes that the sessions assisted him in remembering how he is supposed to react to others when they feel sad, depressed or angry. The skills that he learned during the sessions have also helped him to spend more time with his family. When he cannot control his anger he will go to his room rather than raise his voice. The sessions have also helped Freddy to be more cooperative with his friends at school.

His favourite activity from the intervention programme was Mr. Face; he also liked finding the feelings from his list on the faces stuck to the wall and the feelings thermostat.

Since the intervention programme, Freddie has found it easy to make new friends at school. He mentioned that he is playing with Oliver sometimes. He has also been able to maintain relationships with friends.

The sessions taught Freddie to walk away from people that are rude to him. He has also learned to manage his feelings of anger, making them easier to handle. This has improved his relationship with his teacher, and he sees himself as a very good child.

Oliver

His participation in the intervention programme has taught Oliver to evaluate what people feel by looking at their faces. He has also learned not to get angry when he is playing with other children, as that could cause them not to play with him again. He now knows to ask his friends if they need help when he notices
that they are sad, depressed or angry. After participating in the sessions, he can identify when his sister is upset, and will change his actions accordingly.

Oliver’s favourite activity from the intervention programme was creating and filming Mr. Apple and Mrs Orange. He learned the most from the activity that explained how to say no to someone nicely.

Since participating in the intervention programme Oliver has maintained his old friends and made new ones. He is capable of controlling his temper when other children are rude or disagree with him. He also feels that his relationship with his teacher is good; she understands him and he listens to her and controls his temper.
<table>
<thead>
<tr>
<th></th>
<th>Appendix 22 - Checklist</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Does s(he) introduce her/himself to others without being told to?</td>
</tr>
<tr>
<td>2.</td>
<td>Does s(he) pay attention when spoken to by others?</td>
</tr>
<tr>
<td>3.</td>
<td>Does s(he) offer help to others if they are hurt or sick?</td>
</tr>
<tr>
<td>4.</td>
<td>Does s(he) give appropriate eye contact while speaking, or when spoken to?</td>
</tr>
<tr>
<td>5.</td>
<td>Does s(he) use greetings to familiar peers and adults?</td>
</tr>
<tr>
<td>6.</td>
<td>Does s(he) use greetings to new non-familiar peers and adults?</td>
</tr>
<tr>
<td>7.</td>
<td>Does s(he) use any compromising skills? E.g. Negotiating, Finding a middle ground, Assessing value, Making concessions</td>
</tr>
<tr>
<td>8.</td>
<td>Does s(he) ask peers to do things with her/him socially?</td>
</tr>
<tr>
<td>9.</td>
<td>Does s(he) interrupt appropriately saying, “excuse me” or apologize for interrupting?</td>
</tr>
<tr>
<td>10.</td>
<td>Does s(he) make interjections (wow, cool) to show interest in what someone is saying?</td>
</tr>
<tr>
<td>11.</td>
<td>Does s(he) start appropriate conversations with others?</td>
</tr>
<tr>
<td>12.</td>
<td>Does s(he) blurt out inappropriate comments?</td>
</tr>
<tr>
<td>13.</td>
<td>Does s(he) read body language (specifically the subtle</td>
</tr>
<tr>
<td></td>
<td>Question</td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>14.</td>
<td>Does s(he) maintain a conversation on a non-preferred topic?</td>
</tr>
<tr>
<td>15.</td>
<td>Does s(he) show pleasure by smiling at others?</td>
</tr>
<tr>
<td>16.</td>
<td>Does s(he) help around the house when you are sick?</td>
</tr>
<tr>
<td>17.</td>
<td>Does s(he) able to “read” facial expressions of (ALL of those listed below) :</td>
</tr>
<tr>
<td></td>
<td>a. Disappointment</td>
</tr>
<tr>
<td></td>
<td>b. Happiness</td>
</tr>
<tr>
<td></td>
<td>c. Sadness</td>
</tr>
<tr>
<td></td>
<td>d. Surprise (pleasant)</td>
</tr>
<tr>
<td></td>
<td>e. Anger</td>
</tr>
<tr>
<td></td>
<td>f. Confusion</td>
</tr>
<tr>
<td></td>
<td>g. Worry</td>
</tr>
<tr>
<td>18.</td>
<td>Does s(he) able to deflect teasing of others appropriately?</td>
</tr>
<tr>
<td>19.</td>
<td>Does s(he) understand sarcasm?</td>
</tr>
<tr>
<td>20.</td>
<td>Does s(he) understand idioms?</td>
</tr>
<tr>
<td>21.</td>
<td>Does s(he) understand jokes?</td>
</tr>
<tr>
<td>22.</td>
<td>Does s(he) understand metaphors?</td>
</tr>
</tbody>
</table>

453
<table>
<thead>
<tr>
<th></th>
<th>Question</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.</td>
<td>Does s(he) use appropriate caution in interacting with strangers?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>Does s(he) able to tactfully express displeasure to others?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>Does s(he) seek out others with whom to interact?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td>Is s(he) easily embarrassed?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27.</td>
<td>Does s(he) buy gifts to his friends in their birthdays?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28.</td>
<td>Does s(he) use “polite” words, such as “please”, “thank you”, “excuse me”, etc.?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td>Does s(he) has hobbies and interests that are age-appropriate?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30.</td>
<td>Does s(he) like to be alone?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31.</td>
<td>Does s(he) consider multiple perspectives i.e. multiple viewpoints?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32.</td>
<td>Does s(he) take the initiative to assist others when they need help?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33.</td>
<td>Does s(he) come and give you a hug if you are upset?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34.</td>
<td>Does s(he) have friends, rather than just acquaintances?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>