An exploratory study to investigate the usefulness of a personalised, in-school cognitive-behavioural intervention (The Homunculi Approach) in supporting emotional regulation in primary aged children with Autistic Spectrum Disorder

A thesis submitted to the University of Manchester for the degree of Doctorate in Educational and Child Psychology in the Faculty of Humanities

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An exploratory study to investigate the usefulness of a personalised, in-school cognitive-behavioural intervention (The Homunculi Approach) in supporting emotional regulation in primary aged children with Autistic Spectrum Disorder

Background: Emotional regulation impairments are considered a key difficulty for children with ASD, and disrupted emotional regulation is likely to be a factor contributing to challenging behaviour that children with ASD often present with. There is a growing evidence base for using CBT with children with ASD. A gap in the literature highlights a need for research which explores the use of CBT with key stage two pupils with ASD, specifically to address emotional regulation difficulties.

Participants: Three year 4 and 5 pupils with a diagnosis of ASD and identified difficulties with emotional regulation were recruited from two mainstream primary schools. The views of their parents and teachers were also gathered.

Methods: An exploratory multiple-embedded case study design was employed involving three cases from two settings, using qualitative and quantitative data collection at three time intervals. The quantitative measures consisted of pupil, parent and teacher measures of pupil emotional regulation skills, and the qualitative measures took the form of semi-structured individual interviews with pupils and teachers.

Analysis/ Findings: Data were analysed using thematic analysis and descriptive statistics. Each case was analysed individually followed by a cross-case analysis. Findings are discussed in relation to implications for the use of CBT with ASD for emotional regulation and the role of the EP.

Conclusion/ Implications: The study extends understanding about utilising CBT to support the development of emotional regulation skills in children with ASD. It also adds to the literature on adaptations needed to enable children with ASD to access CBT. Suggestions are made for future research regarding supporting emotional regulation skills in children with ASD.
Declaration

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<td>CAMHS</td>
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<td>CASEL</td>
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<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
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<tr>
<td>WISC-IV</td>
<td>Wechsler Intelligence Scale for Children, Fourth Edition</td>
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CHAPTER ONE: INTRODUCTION

1.1 Chapter Outline

This chapter provides information regarding the context within which this study has taken place, as well as providing a rationale for the research. The remaining chapters of this thesis are then outlined.

1.2 Rationale

Autistic Spectrum Disorder (ASD) is a pervasive developmental disorder characterised by three core symptoms: deficits in social skills, difficulties with communication, and repetitive behaviours and restricted interests (APA, 2000). In addition to this, children and young people with ASD can often present with challenging behaviour: Ashburner, Ziviani and Rodger (2010) found that children with ASD presented with significantly higher levels of behavioural and emotional difficulties at school than their typically developing peers. This is a barrier to the full participation of some children with ASD in mainstream educational settings.

Inclusion for children and young people, including children with special educational needs (SEN), is currently driven by both national and international legislation. Article 23 of the United Nations Convention for the Rights of the Child (1989) states that all children should be facilitated to have active participation in the community, and the Salamanca Statement and Framework for Action for Special Needs Education (UNESCO, 1994) also promotes inclusive education for all children. Full involvement in mainstream school life is demanding for children and young people with ASD. High expectations coupled with the core difficulties of ASD plus emotional regulation challenges may often result in pupils with ASD presenting with challenging behaviour. According to the Department for Education (DfE) (2012), 29% of children and young people with ASD are educated within a specialist provision. Exclusion statistics suggest that 27% of children with ASD in Britain had been excluded at some point during their education, in comparison with 4% of children without ASD (Green, McGinnity, Meltzer, Ford & Goodman, 2005), and
Humphrey (2008) stated that children with ASD are 20 times more likely to be excluded than those without SEN. One of the most common reasons for the exclusion of pupils with ASD was maladaptive behaviour, including inappropriate, disruptive, noisy, aggressive or violent behaviour (Barnard, Broach, Potter & Prior, 2000). Emotional regulation difficulties play a key role in challenges faced by people with ASD in education (Samson, Phillips, Parker, Shah, Gross & Hardan, 2014), and such difficulties with emotional regulation may also be a potential underlying cause of challenging behaviour.

The above statistics demonstrate a need for interventions to support children with ASD to be fully included in mainstream school. Cognitive Behavioural Therapy (CBT) is used by many educational psychologists (EPs) as a therapeutic intervention (Atkinson, Bragg, Squires, Muscutt & Wasilewski, 2011) and has an emerging evidence base relating to the effectiveness of its use with children and young people with ASD. Much of the existing research evidence investigating the use of CBT with children with ASD has been in relation to addressing anxiety. To date, very little research has been published regarding the use of CBT with children with ASD to support emotional regulation skills.

This thesis focuses on the effectiveness of a CBT intervention designed specifically for use with children and young people with ASD, to investigate its usefulness in supporting emotional regulation skills. The intervention was based on ‘The Homunculi Approach’ (Greig & Mackay, 2013) and consisted of five individual and personalised sessions with three primary-aged children, for one hour a week over five weeks. Participants all had a diagnosis of ASD and also had difficulties with emotional regulation.

1.3 Context for the Current Research Project

This research took place in two local authorities situated in the North-West of England. This research was not directed by a Local Authority (LA) but did tie in with service priorities (increasing inclusion of pupils with ASD) in the Educational
Psychology Service (EPS) where the researcher is on placement as a Trainee Educational Psychologist (TEP).

1.4 The Researcher

The researcher is a TEP at the University of Manchester, working within one of the LAs in which this research was carried out. The prior experience of the researcher as well as the training from the Doctorate in Educational and Child Psychology programme has influenced the nature of this research to some extent. The researcher has considerable professional experience of working with pupils with ASD in both mainstream and specialist settings as well as in the community, whilst working as a trainee educational psychologist (TEP) and in previous roles. ASD is an area of particular interest to the researcher, particularly with regard to supporting pupils with ASD to develop the skills that will support them to lead more independent lives in the future. The researcher has knowledge of CBT gained through university training and through the use of CBT strategies with pupils whilst on placement as a TEP.

1.5 Chapter Outline

The rest of this thesis is structured as follows:

- **Literature Review:** This looks at the current climate regarding the education of pupils with ASD. It provides a discussion of challenging behaviour often presented by children with ASD and potential causes of such behaviour, including difficulties with emotional regulation. Different ways to support the emotional regulation skills of children with ASD are discussed. There is then a discussion around the use of CBT for individuals with ASD.

- **Methodology:** This provides a detailed description of the study design and the data collection and data analysis processes.

- **Findings:** Each case is presented and analysed individually, followed by a cross-case analysis.
• **Discussion:** In this chapter the main findings are summarised and each research question is addressed. A critique of the current study is presented and its limitations are discussed. Implications for future research, educational psychologists and schools are considered.
Chapter Two: Literature Review

2.1 Chapter Outline

This chapter is structured into several sections to systematically explore a number of areas including challenging behaviour and inclusion issues for children with ASD. The current literature regarding emotional regulation is presented followed by a discussion of emotional regulation skills in children with ASD, potential barriers to the development of emotional regulation in children with ASD, and interventions that have been researched to support the development of emotional regulation in children with ASD.

The structure of this chapter is as follows. Firstly, the methodology of the literature review is presented, detailing the aims of the review, the review strategy used and the literature returned following the use of this strategy. Then an overview of the wider contextual literature is presented and discussed, followed by a critique of key studies closely related to the current research. This leads to the identification of a knowledge gap in this particular area. The chapter concludes with the research questions for this study.

2.2 Aims of the Literature Review

The aims of this literature review are:

- To present a broad picture of academic research relating to emotional regulation in children with ASD and to develop an understanding of how difficulties with emotional regulation may affect the behaviour and inclusion of children and young people with ASD
- To focus the reader on emotional regulation interventions that are available to schools, including those interventions specifically aimed at children and young people with ASD
- To investigate research relating to the use of CBT with children and young people with ASD to support the development of emotional regulation skills.
2.3 Review Strategy

A variety of combinations of the search terms were entered into various academic databases in order to gain a general overview of the topic. The terms used were as follows: ‘autism’, ‘ASD’, ‘emotional regulation’, ‘emotion regulation’, ‘school’, ‘behaviour’, ‘behavior’, and ‘inclusion’. The databases used were PsychINFO, SAGE: Education, ERIC, Web of Knowledge, and the British Education Index. A targeted, systematic search to analyse research regarding the use of CBT with children with ASD was then carried out using different combinations of the search terms ‘CBT’, ‘cognitive behavio* therapy’, ‘ASD’, ‘autis*’, ‘child*’, ‘school’, ‘adolescent’, ‘young person’, and ‘young people’ in title, keyword, abstract, heading word, table of contents, key concepts, original title and tests and measures.

Searches were carried out between November 2013 and March 2014, with follow up searches between January and March 2015. The review strategy also included reference harvesting and journal articles gathered through direct correspondence with other researchers (Mackay & Greig, 2008; Greig & Mackay, 2005). Sections 2.4 to 2.9 provide an outline for the context of this study, including overviews of ASD and emotional regulation, as well as the principles behind CBT. Section 2.10 then focuses more specifically on areas of particular relevance to the current study.

The literature review begins with a brief overview of ASD. It is acknowledged that this is a complex and at times controversial area of research and a comprehensive examination of the range of issues related to ASD is beyond the scope of this research. The reader is directed to recent publications by Wong, Odum, Hume, Cox, Fettig, Kucharczyk, Brock, Plavnick, Fleury and Schultz (2013) and Bond, Symes, Hebron, Humphrey and Morewood (2015) for a more in-depth overview of current issues.
2.4 Autistic Spectrum Disorder (ASD)

2.4.1 Historical context of ASD.

First recognised in the 1940s, ASD is generally defined as a lifelong developmental disability. Wing and Gould (1979) described ASD as being a spectrum, with different people manifesting social interaction difficulties in different ways and to varying degrees. Wing (1988) introduced the notion of a ‘triad of impairments’, suggesting that those with ASD shared impairments in three main areas: social communication, social interaction and social imagination. The impact of cognitive processes upon the behavioural presentation in ASD is considered in many accepted psychological theories of ASD including the Theory of Mind Hypothesis (Baron-Cohen, Leslie & Frith, 1985), Central Coherence Theory (Frith, 1989) and Executive Function Theory (Ozonoff, Pennington & Rogers, 1991).

2.4.2 Current conceptualisation of ASD.

Two main classification systems are used in the process of diagnosing ASD in the UK: the International Classification of Diseases 10 (ICD-10; World Health Organisation, 1992) and the Diagnostic and Statistical Manual of Mental Disorders 5 (DSM V; American Psychological Association (APA), 2013). The more recent DSM V identifies ASD in terms of two primary diagnostic markers, which contrasts with Wing’s original conceptualisation of ASD being a ‘triad’ of impairments. The two primary diagnostic markers for ASD in the DSM V are difficulties in social communication and restricted or repetitive behaviours or interests. Difficulties in social communication include difficulties with social reciprocity, difficulties with non-verbal social behaviour and difficulties establishing social relationships; restricted or repetitive behaviours or interests include stereotypic behaviour or speech, an excessive adherence to routines and highly fixated interests. Although the triad of impairments has been removed from diagnostic criteria, it is still used in everyday thinking, for example by EPs in the LA in which the researcher is on placement.
2.4.3 Prevalence of ASD.

ASD is a high profile diagnosis (Bond et al. 2015) and the way that ASD is defined and classified is constantly evolving. There is ongoing debate regarding the prevalence of autism, which appears to have increased markedly over the past 20 years. Fombanne (2005) estimated that there are 13 people per 10,000 formally diagnosed as ‘autistic’, but approximately 21 children per 10,000 meet the ‘triad of impairments’ criteria (Wing et al. 1979). Baird, Simonoff, Pickles, Chandler, Loucas, Meldrum, and Charman (2006) found a 1% prevalence of ASD, and this is supported by Baron-Cohen, Scott, Allison, Williams, Bolton, Matthews, and Brayne (2009) who found a prevalence rate of 1% for five to nine year olds.

Increased prevalence (or indeed, increased diagnosis) of ASD has intensified demand for effective educational and therapeutic services (Wong et al. 2013). Identifying the most appropriate interventions to support children and young people with ASD is a controversial area which attracts considerable scrutiny and debate (Bond et al. 2015). It is important that research is conducted into the effectiveness of interventions to support this group of children in order to ensure that they are supported to develop the skills that are essential to success in school and beyond.

2.4.4 Intervention approaches.

Wong et al. (2013) identified two main classifications of interventions for ASD within the research literature as ‘comprehensive treatment models’ and ‘focused intervention practices’. ‘Comprehensive treatment models’, according to Wong et al. (2013), include those sets of practices which are designed to achieve a broad learning or developmental impact upon the core deficits of ASD. ‘Focused intervention practices’, according to Wong et al. (2013), are designed to address a single goal or skill. Charman, Pellicano, Peacey, Peacey, Forward and Dockrell (2011) state that good practice in autism education goes beyond individualisation of the curriculum and towards a ‘unique autism curriculum’ which addresses not
only the learning needs of the children, but also their social, emotional and communication needs.

The literature review will now move on to discussing educational practice in relation to ASD.

2.5 ASD and the Educational Context

2.5.1 Inclusion and children and young people with ASD.

The term ‘social inclusion’ refers to social integration and social cohesion, and is rooted in the concept of equality. Humphrey (2008) defines the term ‘inclusion’ as the promotion of all pupils’ presence, participation, acceptance and achievement in society, and states that inclusion is an ongoing process. There are a number of legislative frameworks and government guidelines that promote inclusion for all children. Article 23 of the United Nations Convention for the Rights of the Child (1989) states that all children should enjoy a full and decent life in conditions which ensure dignity, promote self-reliance and facilitate the child’s active participation in the community and the Salamanca Statement and Framework for Action on Special Needs Education (UNESCO, 1994) promotes inclusive education for all, stating that social inclusion within mainstream settings should be the norm for all pupils. Further guidelines including DfES (2004) and UNESCO (2005) also promote the inclusion of all pupils.

2.5.2 Educational provision for children and young people with ASD.

Presently, there is a continuum of educational provision for pupils with ASD; specialist provision, specialist resource provision within a mainstream school and mainstream education. Research from the DfE (2012) found that 29% of children with a diagnosis of autism are educated within specialist provisions. The proportion of children with ASD who are educated within specialist provisions is high when compared to other disabilities, for example, according to the DFE (2012), 20.4% of children and young people in specialist provisions have ASD as the main need on their statement of SEN, in comparison with 13.9% having behaviour, emotional and
social difficulties as the main need on their statement of SEN, and 8.8% having profound and multiple learning difficulties as the main need on their statement of SEN.

According to the DfE (2012), ASD has been the most frequent type of primary need in all special schools over recent years at 20.4%. Barnard et al. (2002) undertook a survey in seven local authorities in England, Wales and Scotland in order to provide a snapshot of how teachers are experiencing autism in schools. They found that 1 in 3 children in the special schools surveyed had special educational needs related to ASD, compared to 1 in 128 in mainstream schools, which suggests that perhaps this may be disproportionate to the number of children with other special educational needs educated within special schools. The Lamb Enquiry (2009) found that schools need guidance to ensure that increasingly complex pupils make progress in mainstream education.

2.5.3 Exclusion rates of children and young people with ASD.

Research from Green et al. (2005) showed that 27% of children with autism in Britain had been excluded from school at some point during their education, in comparison with 4% of children without ASD. Humphrey (2008) stated that children with ASD were 20 times more likely to be excluded than those without SEN. More recent research from Ambitious About Autism (2014) found that 20% of parents of children with ASD reported that their child had been excluded in the past 12 months, and that four out of 10 children with autism had been excluded informally and therefore illegally during their time at school. According to Barnard et al. (2000), one of the most common reasons for the exclusion of children and young people with ASD was maladaptive behaviour, including inappropriate, disruptive, noisy, aggressive or violent behaviour. In light of the current exclusion rates of children and young people with ASD the presence, participation, acceptance and achievement of this vulnerable group should be scrutinised. Research from Lindsay, Proulx, Thomson and Scott (2013) found that the full inclusion of children with ASD in mainstream settings was challenging for teachers and that one factor that added to the challenge is understanding and managing the behaviour of children with ASD.
within the mainstream environment. Interventions to support children with ASD to self-manage their behaviour more easily are therefore likely to be beneficial. The next section of the literature review will define more specifically some of the behaviours which lead to children with ASD becoming excluded.

2.6 ASD and Challenging Behaviour

The term challenging behaviour, for the purpose of this thesis, is in line with definitions provided by Whitaker (2001) and Emerson (2001). Whitaker (2001) states that challenging behaviour is any behaviour that challenges either our understanding, our wellbeing, the wellbeing of a child, or our ability to carry out roles and responsibilities as parents or professionals. Emerson (2001) states that challenging behaviour is any kind of behaviour that could cause significant risks to people’s wellbeing, or cause a barrier to accessing community settings, preventing people from accessing services that they are entitled to, for example education or community resources.

2.6.1 Challenging behaviour in children and young people with ASD.

There has been a variety of research studies investigating challenging behaviour in children and young people with ASD. Ashburner et al. (2010) found that children with ASD presented with significantly higher levels of behavioural and emotional difficulties at school than their typically developing peers, including externalising behaviours. Similarly, Charman, Ricketts, Dockrell, Lindsay and Palikara (2014) found that children with ASD had significantly elevated emotional and behavioural problems compared to population norms, as measured by the strengths and difficulties questionnaire (SDQ). Mackintosh and Dissanayake (2006) compared social skills and problem behaviours of children with ASD to typically developing children using the Social Skills Rating System (Gresham & Elliot, 1990) and concluded that children with ASD had significant problem behaviours relative to typically developing children. This is in line with research from Boonen et al. (2014) who carried out a questionnaire-based study to investigate factors associated with externalising and internalising problems among children with ASD and found that
children with ASD had significantly more behavioural problems than a control group of children without ASD.

Challenging behaviours can be internalised or externalised, and there is substantial overlap of externalising and internalising symptoms in children with ASD (Gadow, DeVincent & Pomeroy, 2006; LeCavalier, Gadow, DeVincent & Edwards, 2008). Green et al. (2005) found that 51% of parents of children with ASD reported that their child had difficulties with their emotions and 71% reported that their child had difficulties managing their own behaviour. Totsika, Hastings, Emerson, Lancaster and Berridge (2011) found that across 5-16 year olds with ASD and no intellectual disability, 84.8% presented with clinically significant hyperactivity, 73.9% presented with clinically significant emotional problems and 63.8% presented with clinically significant conduct problems. Rhodes (2014) concluded that children with ASD are at risk of developing challenging behaviours that create barriers to educational and social opportunities. Challenging behaviours such as aggression, non-compliance and self-injury are common in children and young people with ASD and, without appropriate support and intervention, they are likely to persist (Murphy et al. 2005). Thus, it is important to develop evidence-based interventions to support those with ASD, and early intervention is crucial in order to prevent barriers to educational and social opportunities being created (McGee, Morrier & Daly, 2000).

### 2.6.2 Causes of challenging behaviour in ASD.

There is no single cause of challenging behaviour in children and young people with ASD. According to the National Autistic Society website there may be a variety of reasons for challenging behaviour including feeling overwhelmed or frustrated, difficulty waiting, seeking social attention, expressing physical discomfort, difficulty communicating feelings in a socially conventional way, sensory sensitivity, or a lack of control (National Autistic Society, 2015).

One of the processes likely to underlie challenging behaviour in ASD is emotional regulation difficulties. Onchwari and Keengwe (2011) stated that inappropriate behaviour in children and young people is often related to emotional regulation and
found that a higher ability to regulate emotion was an effective predictor of appropriate behaviour. This will now be considered in more detail in relation to its definition, typical development and significance, before the specific emotional regulation needs of children with ASD are considered.

2.7 Emotional Regulation

Eisenberg, Smith, Sadovsky and Spinard (2004) define emotional regulation as ‘the process of initiating, avoiding, inhibiting, maintaining or modulating the occurrence, form, intensity or duration of internal feeling states, emotion-related physiological processes, emotion related goals, and/ or behavioural concomitants of emotion, generally in the service of accomplishing one’s goals’ (p. 260). This emphasises the fact that emotional regulation is not a single behaviour or skill, but a collection of processes and strategies (Fujiki, Brinton & Clarke, 2002). Being able to monitor, evaluate and modify emotional reactions is of paramount importance to competent functioning (Thompson, 1991). Being able to return to a state of balance in a reasonable amount of time when confronted with difficult emotional circumstances is an essential skill for every child to learn (Onchwari & Keengwe, 2011). Emotional regulation is considered an important aspect of a child’s emotional and social development and supports stress management and the ability to cope with frustration in social and non-social situations (Konstantareas & Stewart, 2006). Successful emotional regulation is implicated as instrumental for positive outcomes for children and young people (Garnefski, Rieffe, Jellesma, Terwogt & Kraaij, 2006). Ashburner et al. (2010) suggest that educational authorities have concerns regarding challenging behaviour and emotional regulation difficulties of children and young people with ASD in mainstream school settings. This suggests that supporting the development of emotional regulation skills is likely to be beneficial for children and young people, both in the short term and the long term.

2.7.1 Typical development of emotional regulation.

The typical development of emotional regulation through childhood, as outlined by Thompson (1991), is illustrated in table 1. The regulation of emotional arousal
becomes increasingly self-regulated as age increases. This is due to the development of cognitive and linguistic skills, and the emergence of emotional and self-understanding (Thompson, 1991).

Table 1: Typical development of emotional regulation (Thompson, 1991)

<table>
<thead>
<tr>
<th>Age</th>
<th>Emotional Regulation Ability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newborn</td>
<td>Cries uncontrollably when distressed-reliant on caregivers to monitor and regulate this distress, and promote positive affect</td>
</tr>
<tr>
<td>Toddler</td>
<td>Capable of seeking assistance from others when distressed</td>
</tr>
<tr>
<td>Preschool age</td>
<td>Able to reflect upon and talk about feelings</td>
</tr>
<tr>
<td>School age</td>
<td>Can use deliberate strategies, for example redirecting attention to reduce distress; able to control expression of emotion to others</td>
</tr>
<tr>
<td>Adolescent</td>
<td>More idiosyncratic self-regulation strategies evoked through sufficient self-understanding</td>
</tr>
</tbody>
</table>

2.7.2 The importance of emotional regulation in school.

Schools require children to possess a multitude of skills to complete their education. Within a classroom alone, there are numerous demands placed upon a child simultaneously: to attend, engage with learning opportunities, navigate their way around, interact with others, build social relationships, manage frustrations, adapt to changing and evolving situations and so on. Emotional regulation is critical for school success (Macklem, 2008), facilitating positive classroom behaviour and
positive interactions with peers and teachers (Jahromi, Bryce & Swanson, 2013) as well as impacting on a child’s ability to engage in reciprocal relationships and extended interactions, cope with new and changing situations and participate in group social activities (Laurent & Rubin, 2004). Emotional regulation is vital in supporting adjustment to a classroom environment and enabling effective learning to take place. The consequences of emotional dysregulation are significant, including increased behaviour problems, decreased interpersonal interactions, and limited academic success (Jahromi, Meek & Ober-Reynolds, 2012).

2.7.3 Emotional regulation in children with ASD.

Emotional regulation difficulties play a key role in the challenges faced by people with ASD in education, employment and in relationships (Samson et al. 2014). Although it is not considered to be a core deficit in ASD, clinicians and parents have emphasised the important role played by maladaptive behavioural responses such as irritability, anger, aggression and self-injury. Emotional dysregulation may influence such responses in children and young people with ASD (Geller, 2005) and may explain the observed behavioural and emotional difficulties in ASD. Poor emotional regulation appears to be commonplace amongst children with ASD; this then influences impulsive reactions to emotional stimuli and results in behaviours such as tantrums, aggression and self-injury (Mazefsky, Herrington, Siegel, Scarpa, Maddox, Scahill, & White, 2013). Laurent and Rubin (2004) suggest that extreme emotional dysregulation in ASD can present as lashing out at others, tantrum behaviour and fleeing from social settings.

Emotional regulation impairments in those with ASD may present as significant self-regulatory impairments and inadequate coping strategies when frustrated (Jahromi et al. 2013). This is supported by Rieffe, Oosterveld, Meerum Terwogt, Mootz, Van Leeuwen, and Stockmann (2011) who found that children with ASD self-reported fewer coping strategies than their typically developing peers, and Jahromi et al. (2012) who found that children and young people with ASD showed more avoidance and venting strategies, as well as fewer constructive strategies than children without autism. Additionally, research from Ashburner et al. (2010) found
that a higher proportion of students with ASD exhibited clinically significant problems in an area that reflects difficulties in emotional regulation (emotional lability) than they did on any other scale, including social difficulties. Furthermore, children with ASD presented with significantly worse self-regulation skills compared with children with intellectual disability (Barnard-Brak, Ivey-Hatz, Ward & Wei, 2014).

Children with ASD are already vulnerable to behaviour difficulties, decreased interpersonal interactions and academic failure due to the nature of ASD (Jahromi et al. 2012) and emotional regulation difficulties may exacerbate this further. It is therefore important to help children with ASD to understand and manage their emotions to support the development and maintenance of successful social interactions and successful engagement in school life (Scarpa & Reyes, 2011).

Emotional regulation is a critical skill which underlies social communication competence and, as suggested by Laurent and Rubin (2004), this needs to be specifically addressed in children with autism to prevent it from impacting upon areas of their lives where they already face significant challenges.

### 2.7.3.1 Characteristics of ASD that influence emotional regulation.

There are few empirical studies of the developmental process of emotional regulation in people with ASD (Jahromi et al. 2012) although it is likely that people on the autistic spectrum experience atypical development of emotional regulation for a variety of reasons. Prizant, Wetherby, Rubin, Laurent and Rydell (2006), for example, suggest that children and young people with ASD have difficulty regulating their emotions due to language and communication difficulties, social interaction difficulties, emotional expression difficulties and challenges in the development of cognitive and metacognitive skills.

Laurent and Rubin (2004) suggest that the development of emotional regulation skills is undermined in high functioning autism and Asperger Syndrome by core challenges in social communication leading to decreased ability to effectively
communicate, share, and interpret emotional states and consider another person’s perspective, as well as neuropsychological factors including unusual sensory sensitivities and difficulties determining the salience of environmental information.

Mazefsky et al. (2013) suggest that the following factors may affect emotional regulation development in children with ASD:

- Poor emotional insight and self-monitoring leads to lack of motivation for emotional regulation;
- Difficulties with cognitive flexibility and modulating behaviour leads to a greater use of universally applied maladaptive strategies and less effective use of adaptive strategies that are contextually dependent and applied selectively;
- Reduced ability to take the perspective of others leads to reduced ability to evaluate the responses of others, increased misunderstanding and frustration, and difficulties in accurately appraising a situation;
- Sensory hypersensitivity and/or hyposensitivity may lead to intense behavioural reactions.

Mazefsky and White (2014) found that disrupted emotional regulation is likely to be a significant factor in the challenging behaviour displayed by many children and young people with ASD and proposed that a variety of factors associated with ASD are likely to impede emotional regulation. These factors are displayed in figure 1 and explored further in section 2.7.3.3.
2.7.3.2 Challenges to the development of mutual regulation in ASD.

The term ‘mutual regulation’ refers to the emotional regulation that occurs as a result of a social interaction. As the development of mutual regulation takes place within the context of social relationships, this creates challenges for people with ASD which present in a variety of ways. The challenges may include difficulty expressing emotional states in socially acceptable ways, difficulty responding to assistance offered by others and difficulty communicating for assistance in a conventional manner; for example, people with ASD may revert to idiosyncratic emotional displays (Laurent & Rubin, 2004). Some of the challenges to the development of mutual regulation in those with ASD are represented on figure 1 (Mazefsky & White, 2014). Factors such as cognitive rigidity, poor flexibility and difficulties reading social and emotional cues may impede the development of mutual regulation.
2.7.3.3 Challenges to the development of self-regulation in ASD.

In addition to difficulties in developing mutual regulation skills, there are also challenges for children with ASD in developing self-regulation strategies. The term ‘self-regulation’ refers to the emotional regulation that is achieved independently. Self-regulation challenges in ASD may be compounded by a variety of factors. Difficulties tolerating a range of social and sensory experiences may lead to impulsive reactions (as shown on figure 1, Mazefsky & White, 2014). Significant challenges are faced in developing effective and socially appropriate behaviour strategies for self-regulation. Social communication difficulties compromise the ability of a child with ASD to benefit from caregiver models for appropriate strategies, to interpret another person’s intentions, and to follow the attentional focus of another person. The use of metacognitive strategies to plan and complete activities is also affected by social communication difficulties; difficulties with using language strategies to guide behaviour, such as inner language, further impact upon the development of self-regulation skills (Laurent & Rubin, 2004).

2.7.3.4 Interventions to support emotional regulation in children with ASD.

According to Gross (1998), emotional regulation can be taught to and strengthened in children and young people. It could be argued that teaching and strengthening successful emotional regulation strategies in children with ASD will impact positively upon long term mental health and emotional wellbeing; Marwick, Dunlop and Mackay (2005) concluded that the emotional wellbeing of people with ASD should be the most important focus for interventions, yet Samson et al. (2014) found that a limited number of studies have been conducted to investigate emotional dysfunction in children and young people with ASD. Additionally, few interventions have been developed to explicitly target emotional regulation processes in children and young people with ASD (Mazefsky & White 2014). One programme that does specifically support emotional regulation for children with autism is the SCERTS (social communication, emotional regulation and transactional support) model (Prizant et al. 2006). The SCERTS model is a non-exclusive framework for delivering a curriculum which addresses the key areas of difficulty
experienced by those with ASD, including emotional regulation. This model, however, is an approach to delivering the entire curriculum and a typical mainstream school, where the majority of pupils are unlikely to have autism, is unlikely to take on such an approach.

As emotional regulation difficulties and associated challenging behaviours are of particular concern to education authorities (Ashburner et al. 2010), research is needed to investigate how effective different types of support are for children with ASD and difficulties regulating their emotions. Samson, Huber and Gross (2012) suggest that children and young people with ASD and emotional dysregulation would benefit from specific teaching of a range of skills including techniques to enable them to attend to and discriminate between emotions, strategies to improve their ability to respond flexibly to emotions, the development of cognitive processes and strategies associated with reappraisal and perspective taking techniques.

Research from Charman et al. (2011) states that good practice in autism education goes beyond individualisation of the curriculum and towards a ‘unique autism curriculum’. Given the idiosyncratic nature of the difficulties encountered by pupils with ASD, individualised approaches may have the most impact. As illustrated in figure 1, there are a number of factors that may impede the development of emotional regulation in children with ASD, including cognitive rigidity, limited emotional language, difficulty reading social and emotional cues, lower inhibition, sensitivity to change and environmental stimulation, biological dispositions and poor problem solving and abstract reasoning (Mazefsky & White, 2014). Interventions that address a number of these factors across both the behavioural and cognitive domains of emotional regulation development in ASD are likely to be the most effective in supporting some children with ASD to manage their emotions more effectively.

The next section of the literature review will consider the potential role of the EP in supporting the emotional regulation of children with ASD.
2.8 Educational Psychologist Work with Children to Support Emotional Regulation Difficulties

Educational psychologists have wide-ranging expertise and there are a number of ways in which they could support the development of emotional regulation in children with ASD, including behavioural approaches, environmental control approaches, educative approaches and therapeutic approaches. As emotional regulation difficulties may be intrinsic to ASD (Mazefsky et al. 2013) and impact upon long term outcomes for children with ASD including employment and relationships (Samson et al. 2014), it seems that therapeutic intervention to aid the development of emotional regulation skills could have great long-term benefit for children and young people with ASD. EPs are well-placed to carry out such interventions. The development of successful therapeutic interventions for emotional regulation in children with ASD is likely to be beneficial for enhancing inclusion and academic success and may have a positive impact upon long term outcomes for this group of children.

2.8.1 EP therapeutic work with children.

Mackay (2008) states that educational psychologists are a key therapeutic resource for children and young people and that there is a rising commitment to therapy within the profession due to the increase in mental health problems in childhood and the need for expert individual work with such children. Atkinson et al. (2011) noted that 92% of Educational Psychologists in the UK use therapeutic interventions as part of their current practice, with over 80% using direct individual therapeutic intervention. Atkinson et al. (2011) found that the most common therapeutic interventions used by EPs were solution-focused brief therapy, cognitive behavioural therapy (CBT) and personal construct psychology. Of these interventions CBT was felt by the current researcher to offer the most potential in supporting the emotional regulation of children with ASD as there is an existing evidence base for using CBT with this group (see, for example, Cortesi, Giannotti, Sebastiani, Panunzi & Valenti (2012); Elliott & Fitzsimons, 2014, Greig & Mackay, 2005; Koning, Magill-Evans, Volden & Dick, 2013; Lehmkuhl, Storch Bodfish &

2.9 Cognitive Behavioural Therapy

In a survey regarding the use of therapeutic interventions, over 60% of EPs reported using Cognitive Behavioural Therapy (CBT) in the previous two years (Atkinson et al. 2011). CBT is a brief educational and therapeutic approach that can be used to address psychological problems and aims to help the client to understand the links between thoughts, feelings and behaviour by focussing on problems that they face on a day to day basis (Dunsmuir & Iyadurai, 2007). The core principle of CBT is that faulty thinking leads to inappropriate feelings and dysfunctional behaviour. CBT focuses on altering behaviour via two change levers: cognitive (changing thought processes) and behavioural (manipulating antecedents and consequences of behaviour) (Yeo & Choi, 2011). It is based in the here and now, and is directive: the therapist decides what happens in each session.

According to Fuggle, Dunsmuir and Curry (2013), CBT is an intervention based in Social Learning Theory (Bandura 1977) which aims to understand real-life problems. It originates around the ideas of Beck who believed that a range of cognitive structures (for example, anxiety) may have served a survival purpose in early human development (Rait, Monsen & Squires, 2010). CBT was coined with the development of the cognitive model of depression (Beck, 1976) which suggested that depression may be maintained through cognition. Over time this approach has been developed to address a range of different disorders including depression and anxiety.

It is commonly accepted that the main focus of CBT is for the practitioner to seek to develop a shared understanding of how the client is thinking about themselves, the world and other people, and of how this thinking affects the client's feelings and, consequently, their behaviour (e.g. Fuggle et al., 2013; Greig & Mackay, 2013). Greig
and Mackay (2013) suggest that the rationale of CBT is that people’s cognitions influence disordered behaviour and psychological dysfunction. CBT consists of an assessment phase, enabling the therapist to devise a formulation of a problem, and an intervention plan, which specifies the cognitive and behavioural methods of change that will be used to address the problem (Fuggle et al. 2013). The purpose of CBT is to help the client to assess their thoughts, feelings and behaviour realistically, increasing awareness of distorted patterns of thinking.

CBT has become an increasingly prominent treatment since its evaluation by the National Institute for Health and Care Excellence (NICE) as an effective intervention for a variety of needs experienced by adults, including anxiety and depression (NICE, 2009; NICE, 2011), and for depression in children and young people (NICE, 2005). However, the limitations of CBT need to be considered fully. Firstly, it requires commitment from the service user. Secondly, it could be argued that, as it focuses on the here and now, it may not address possible underlying causes of some psychological difficulties. Furthermore, the focus on the client’s ability to alter their thinking may suggest that some difficulties are within person, and it may ignore wider effects of the client’s environment or family life, for example.

The use of CBT with children and young people will be discussed briefly before looking more specifically at how it has been used with children and young people with ASD.

2.9.1 Cognitive behavioural therapy with children and young people.

CBT can be traced back to the 1930s, but only since the late 1990s has it been used with children and young people. There is a growing body of evidence showing how CBT may work with this client group. CBT has been used with children and young people aged 3-18 in order to address a wide range of problems, including anxiety (for example, Eichstedt, Tobon, Phoenix & Wolfe, 2011; Ishikawa et al. 2012; Waters, Mogg & Bradley, 2012), behaviour difficulties (for example, Yeo & Choi, 2011; Yeo, Wong, Gerken & Ansley, 2005), post-traumatic stress disorder (for example, Feather & Ronan, 2006, 2009; Scheeringa, Weems, Cohen, Amaya-Jackson
& Guthrie, 2011), depression (for example, Ehntholt, Smith & Yule, 2005) and phobias (for example, Asbahr et al. 2005; Vigerland et al. 2013); using a range of methodological designs. It is beyond the scope of this thesis to discuss all of this research in detail; for further information the reader is directed to an unpublished university assignment by Downing (2014).

2.9.2 Cognitive behavioural therapy for children and young people with social, emotional and behavioural difficulties (SEBD).

In a systematic literature review encompassing the previous ten years, Downing (2014) highlighted that the efficacy of CBT in addressing emotional and behavioural problems in children and young people has been investigated through a number of studies including Humphrey and Brooks (2006), Maddox et al. (2013), Miranda and Presentacion (2000), Squires (2001), Squires and Caddick (2012), Wanders, Serra and de Jongh (2008), Yeo and Choi (2011) and Yeo et al. (2005).

Of the studies listed above, three were clinic-based studies: Maddox et al. (2013), Wanders, Serra and de Jongh (2003), and Yeo, Wong, Gerken and Ansley (2005). Of these, two involved group CBT (Wanders et al. 2003, and Yeo et al. 2005) and one involved individualised CBT (Maddox et al. 2013). A case series (Maddox et al. 2013) aimed to investigate whether a novel, 20 session CBT intervention could improve coping and resilience, reduce emotional problems and help manage ‘psychotic-like experiences’ in four children aged 9-14. Measures included the Strengths and Difficulties Questionnaire (Goodman, 1999) and a questionnaire adapted from the Diagnostic Interview Schedule for Children (Costello, Edelbrock, Dulcan, Kalas, & Klaric, 1984) to cover a range of psychotic symptomology. Measures were completed by children prior to the intervention, midway through the intervention and at the end of the therapy. They found that emotional problems decreased during therapy, as did the frequency and impact of ‘psychotic-like experiences’. This provides some preliminary evidence to suggest that novel, manualised CBT could be useful in addressing the frequency and impact of psychotic-like experiences in 9-14 year olds, as well as associated emotional problems. However, this study carries the obvious limitations of case study methodology and therefore the findings need to
be interpreted with caution. The small, selected sample of this study means that results are not generalisable, and may have had an impact upon the large effect sizes noted in the study. Furthermore, a lack of a comparison group means that it is difficult to assess how far the changes could be attributed to the CBT, and the measure of ‘psychotic-like experiences’ is not validated as a tool for assessing clinical change. On the other hand, the exploratory nature of this study provides encouragement that CBT could be beneficial and feasible for children experiencing emotional difficulties and promotes further research in this area.

Wanders, Serra and de Jongh (2003) conducted a small scale RCT (sample size of 26) to investigate the treatment effectiveness of eye movement desensitisation and reprocessing (EMDR) as compared to CBT in addressing behavioural problems and self-esteem in 29 eight to thirteen year olds in the UK who had been referred to child and adolescent psychiatry services for the diagnosis and treatment of behaviour problems. Children were randomly assigned to either the EMDR group (involving a manualised EMDR programme (Shapiro, 2001)) or the CBT group (involving a manualised CBT programme (Cladder, Nijhoff-Huysse & Mulder, 1998)), and each group received four, one hour individual sessions during a six week period. Measures included questionnaires completed by children, parents and mentors. Findings showed that brief interventions to address behaviour and self-esteem can be effective and that EMDR compares well with CBT, although evidence of significant improvements was not consistent across all measures. This study adds to the literature regarding the use of CBT with children and young people although the small sample and lack of control group are clear limitations of this study.

Yeo et al. (2005) found a cognitive behavioural curriculum to be beneficial for 13 children and young people aged 6-15 with challenging behaviour in a hospital setting. Each child had at least one diagnosable psychiatric disorder according to DSM-III. The children each received three hours per week of the ‘Clear Thinking’ CBT programme. Measures included teacher, children and parent completion of the Achenbach Rating Scales (Achenbach, 1991). Clinicians also completed the Global Assessment of Functioning (GAF) scale (APA, 1994) at pre-treatment, post-
treatment and follow up. A significant improvement in the participants’ clinical conditions was found and maintained at three month follow up according to teacher and clinician reports, and child reports showed a significant improvement in clinical maladjustment although this was not maintained at three month follow up. Clinical functioning did not improve significantly according to parent reports. This study concluded that CBT had a significant impact upon child clinical condition according to clinician, teacher and child reports.

The small sample size of this study reduces external validity and limits the power of the statistical analysis, and the nature and severity of the difficulties of the participants meant it was unethical to compare the CBT group to a ‘waitlist’ condition. However, this study lends support to the growing body of evidence to support the use of CBT for children and young people with social, emotional and behavioural difficulties.

In addition to clinic based CBT studies, some were conducted within school settings including Humphrey and Brooks (2006), Miranda and Presentacion (2000), Squires (2001), Squires and Caddick (2012) and Yeo and Choi (2011). All five of these studies involved group CBT.

Squires and Caddick (2012) explored the effectiveness of school-based, eight-session CBT for twelve 12 to 13 year olds with externalising behaviour difficulties. Pupils were matched in pairs and then randomly assigned to one of two groups, either a CBT group or a control group who received normal school support. Self-report and teacher report measures pre- and post-intervention showed a large differential effect size between the CBT group and the control group, suggesting a positive change in self-perceptions of behaviour. The researchers had anticipated an improvement in teacher perceptions for the intervention group with no change for the control group, or that perceptions of pupil behaviour would remain the same. However unexpectedly, teacher ratings improved for all pupils, regardless of group. The researchers suggested that one potential explanation for this may be that the targeted intervention had reduced teacher-perceived stressors by reducing overall stressors through the therapeutic intervention with one group of pupils.
Yeo and Choi (2011) carried out a study with an experimental design to investigate the effectiveness of CBT delivered by school psychologists in addressing behaviour difficulties in elementary classrooms in Singapore, focusing on self-control, behaviour, social skills, peer relationships and self-esteem. Ninety-five 8 to 12 year olds from Singapore elementary schools were randomly assigned to either an experimental CBT group or a control group; teachers were blind as to which group children had been assigned. The CBT intervention consisted of 10 one-hour sessions twice a week for both the experimental group (who received group CBT) and the control group (who received a ten session ‘obey the rules’ group intervention). Measures included teacher reports at pre-intervention, post intervention and at a one month follow up, using the Self-Control Rating Scale (Kendall & Wilcox, 1979) and the Teacher Rating Scale (Brown & Hammill, 1990), and pupil self-report using the Student Rating Scale (Brown & Hammill, 1990) and the Self-Esteem Scale (Rosenberg, 1989). Statistical analysis showed that those in the CBT intervention group showed a marked improvement compared to the control group in all examined domains, with moderate to large effect sizes. Not all gains were maintained at follow up.

This study has the advantage of an experimental design with participants randomly assigned to groups, and findings are promising. However, this study relied exclusively on teacher and pupil reports and used a relatively small sample. External validity is limited as the selection of schools was not random. Nevertheless, this study presents encouraging effect sizes and supports the literature regarding the use of group CBT to address behaviour difficulties in children.

Humphrey and Brooks (2006) evaluated a six session CBT intervention over four weeks to address anger management in pupils at risk of exclusion from school. Participants included 12 young people aged 13 to 14 who were at risk of exclusion as a direct consequence of anger problems, according to teachers. A single group phase change design was employed to enable change in behaviour to be assessed as a result of the intervention. A mixture of quantitative measures (including questionnaires) and qualitative measures (including observations and interviews)
were used and findings showed that significant improvements in behaviour were observed as a result of the intervention, although for some domains this was not maintained at four-week follow-up. Factors facilitating and impeding change were also explored. Although it carried the limitations associated with not having a control group, this study holds the advantage of being carried out within the school context, an environment that the participants were familiar with.

Squires (2001) carried out a school-based study to evaluate the effect of a group CBT intervention for mainstream pupils on teacher perceptions of behaviour and pupil perceptions of self-control. Three groups of year five to year eight pupils (with six to nine pupils in each group) across two schools (a middle school and a high school) were recruited. Pupils involved in the study were reported to be overtly or covertly disruptive in class, for example presenting with withdrawn or acting out behaviours. Participants were not at risk of exclusion and schools had no plans to refer the pupils involved in the study to the educational psychology service. Pre and post intervention measures were completed by participants and teachers; findings showed that for 16 out of the 17 pupils there was an improvement in at least one of the areas measured. A significant difference was found from pre-intervention to post-intervention with regard to improvements in self-control and classroom behaviour, showing that CBT can be beneficial to children and young people to improve levels of self-control and classroom behaviour.

Miranda and Presentacion (2000) investigated the effect of two CBT treatment programmes for children with ADHD. Thirty-two children with ADHD aged 9 to 12 from Spanish primary schools were split into two groups of 16, with eight children in each group presenting with aggression and eight children in each group not presenting with aggression. Therapists were blind to the participants in the groups. One group received the ‘Stop and Think’ CBT programme (Kendall, 1992) and the second group received the Stop and Think programme and anger control training. A number of questionnaires were completed by teachers and parents and findings showed important improvements on several measures for both groups, including the Social Skills Assessment Teacher Form (adapted from Goldstein, 1988), The Self-
Control Rating Scale (Kendall & Wilcox, 1979), The Problems Inventory in the School (Miranda et al. 1993), the IOWA Conners Teaching Rating Scale (adapted and translated from Loney & Milcich, 1982), Abbreviated Conners Rating Scale (Conners, 1975) and The Scale of Behavioral Problems (Navarro, Peiro, Llacer & Silva, 1993). Results indicated that children in both treatment groups scored significantly better in all areas at post-test and at follow up, although it should be noted that effect sizes were not reported and that the study did not use a control group. Additionally, Miranda and Presentacion (2000) reported notable gains for all children, whether or not they were presenting aggressive behaviour. Parental report indicated less progress for the children demonstrating aggression, although the authors noted that parental sensitivity to the emotional responses of the children demonstrating aggression might have been a factor. Generally, however, the findings provide support for CBT training for children with ADHD, including those demonstrating aggression.

2.9.3 Evaluation of the use of CBT with children and young people.

The literature review by Downing (2014) shows a growing body of evidence for the effective use of CBT in relation to addressing a number of needs, including behavioural and emotional difficulties, as discussed in detail in section 2.9.2. Although more research is needed, CBT looks promising as an effective intervention for a variety of difficulties in children and young people with emotional and behavioural difficulties. Some research has been carried out within school contexts, which are more naturalistic settings for children and young people than clinical settings.

The evidence shows that CBT can be successful in addressing a variety of needs in children and young people. It is notable that the majority of research into the use of CBT with children and young people with emotional and behavioural difficulties has been carried out with typically developing children. In light of the increasing recognition of the needs of children and young people with ASD, and the drive to enhance inclusion for this group, interventions are needed to support this group to succeed in mainstream education.
The next section of the literature review will take a broader perspective, to investigate the effectiveness of CBT for children with ASD across a wide range of difficulties. There will then be a specific focus on the use of CBT to support children with emotional regulation difficulties and ASD.

2.10 Cognitive Behavioural Therapy with Children with ASD – A Systematic Literature Review

This section presents a systematic literature review that focuses on the use of CBT with children and young people with ASD. It is structured around two literature review questions (LRQs):

LRQ1: What research has been carried out regarding the use of CBT with children and young people with ASD, and how effective has CBT been with this group?

LRQ2: To what extent has CBT been used to address emotional regulation skills in children with ASD, and how effective has it been?

These will be addressed in turn.

2.10.1 LRQ1: What research has been carried out regarding the use of CBT with children and young people with ASD, and how effective has CBT been with this group?

Appendix 1 provides details of the inclusion and exclusion criteria applied to the search results. Appendix 2 presents details of studies discounted from this literature review. Once the exclusion and inclusion criteria had been applied to search results, the papers were categorised according to the following intended purposes of the CBT:

- anxiety
- sleep difficulties
- social skills
• Obsessive Compulsive Disorder (OCD)

2.10.1.1 CBT to address anxiety in children and young people with ASD.

Three case studies were identified within this area. Ames and Weiss (2013) used an exploratory case study design to investigate the adaptations required to enable a nine year old non-verbal boy with ASD to access CBT to address anxiety and aggressive behaviour. This study also investigated the effects of providing parent psychoeducation (separately to the child CBT) aiming to improve the effectiveness of the CBT by enhancing the participant’s ability to generalise any new skills he had learned. This case study had the benefits of a design using both quantitative and qualitative data, which enabled the triangulation of data and a clearer, more comprehensive picture to be formed, enhancing the validity of the findings and conclusions (Robson, 2011). The case study by Ames and Weiss (2013) found that qualitative gains were found, but these were not supported by quantitative data. This highlights one of the advantages of using different methods: although differences in behaviour may not be recognised by quantitative measures, qualitative data may have a broader scope to recognise any change that may not be considered a clinical difference.

Ozsivadjian and Knott (2011) carried out a mixed-method case series involving six children with ASD (aged 8-15) with concurrent anxiety. They used quantitative measures such as the Anxiety Disorders Interview Schedule for Children (Silverman & Albano, 1996) and the Multi-Dimensional Anxiety Scale for Children (March, 1997) and gathered qualitative data in the form of parental interviews to add detail to the conclusions. The authors found that both qualitative data (parental interview) and quantitative data (Anxiety Disorders Interview Schedule) showed that the severity of anxiety symptoms had improved after the CBT intervention.

White et al. (2009) also used a case study design to investigate the effectiveness of a manual-based individual and group CBT intervention with four adolescents with high functioning autism and anxiety. Quantitative scales were used, such as the Multidimensional Anxiety Scale for Children (March, 1997). Some scales included
both parent and child reports, enabling triangulation of data. White et al. (2009) found positive effects of CBT in reducing anxiety in three out of the four participants. However, this study carries the methodological weaknesses of a case study, including the small sample size and potential Hawthorne effect. Furthermore, the researchers suggest that there is a possibility that parental reports of improvement may have been biased due to their time investment in the programme.

The case studies above are exploratory in nature, enabling conclusions to be drawn to direct further research. While they provide data on a multitude of factors that can be taken into account in future studies to enhance validity and reliability, they carry the obvious limitation of being conducted on a very small scale with limited generalisability.

A number of experimental studies have also been conducted in order to investigate this area of research. One such study aimed to establish the potential effectiveness of a 16 week group CBT intervention for anxiety in 22 children and young people with ASD, using a quantitative design and comparing the CBT intervention with treatment as usual and a waitlist condition (McNally-Keehn et al. 2013). The authors included a longitudinal aspect by repeating measures at a two month follow up. The study found preliminary evidence that the CBT condition led to significantly larger reductions in anxiety than those in the wait list, with treatment gains being maintained at two month follow up.

Five RCTs have been conducted to research the use of CBT to address anxiety in children and young people with ASD (Reaven, Blakely-Smith, Culhane-Shelburne & Hepburn, 2012; Storch et al. 2013; Sung et al. 2011; Wood, Drahota, Sze, Har et al. 2009 and Wood, Drahota, Sze, Van Dyke et al. 2009). The studies involved had 50, 45, 70, 40 and 19 participants respectively. Reaven et al. (2012), Storch et al. (2013), Wood, Drahota, Sze, Har et al. (2009) and Wood, Drahota, Sze, Van Dyke et al. (2009) found similar results when comparing a CBT condition to a treatment as usual or a waitlist condition, indicating that CBT is more effective than treatment as usual for treating anxiety in children and young people with ASD. However, Sung et
al. (2011) compared a 16 week CBT intervention with a 16 week social recreational intervention and found that children in both conditions showed significantly lower levels of anxiety symptoms at six month follow up. This suggests that perhaps it is not the type of intervention that makes a difference, but that changes may be due instead to placebo and extra-therapeutic factors.

RCTs have been criticised in relation to the ethics surrounding the random allocation of children to conditions. However, the use of a waitlist condition enables RCTs to be carried out without compromising the treatment of individuals, as waiting lists are common practice in the real world. This enables the size of the difference in predefined outcomes between conditions to be measured. Such RCTs have proved beneficial in investigating the efficacy of using CBT with children and young people with anxiety.

Two further studies are identified in relation to the use of CBT with children with ASD and anxiety (Greig & Mackay, 2005; Mackay & Greig, 2008). These studies are discussed further in section 2.10.2.

### 2.10.1.2 CBT to address sleep difficulties in children and young people with ASD.

Cortesi et al. (2012) used an RCT design with a sample of 160 children aged 4-10 with sleep-onset insomnia and impaired sleep maintenance. Treatment response was assessed using a variety of tools including a sleep diary, sleep questionnaire and one week actigraphic monitoring. Findings from Cortesi et al. (2012) showed that in the short term, CBT combined with drug treatment (melatonin) was more effective than either treatment alone.

### 2.10.1.3 CBT to address social skills in children and young people with ASD.

Schleismann and Gillis (2011) used a single case study design to investigate whether CBT was effective in addressing social phobia in children with ASD. One six year old boy participated in this study. Avoidance behaviours decreased significantly after the intervention, suggesting that CBT may be promising in the treatment of children...
with ASD to address social phobia. However this study carries clear limitations due to the sample size and limitations associated with case study methodology.

Koning et al. (2013) carried out an experimental study with a sample of fifteen 10 to 12 year old boys with ASD, focusing on a 15 week group CBT intervention. Those who received the intervention scored significantly better on measures of specific social skills (including peer interaction and social perception) than those who had not received the intervention. However, no differences in general measures of socialisation were found, suggesting that CBT may only be effective in addressing specific social issues. The validity of this study is enhanced by outcome measures including both observational and standardised measures from multiple informants. The sample size (n=15) limits the power of the findings and thus the generalisability of results. However the strong significant differences reflect clinically significant changes and thus this study suggests promise for the effectiveness of using CBT to support social skills in children with ASD.

Andrews et al. (2013) evaluated the effectiveness of a cognitive-behavioural intervention aiming to improve affectionate communication and friendship skills in 58 children aged 7 to 12 with Asperger Syndrome. Participants in the RCT were randomly assigned to an experimental group or a waiting list group. Measures were taken at pre-intervention, post-intervention and at a three month follow up and included the Spence Child Anxiety Scale- parent version (Nauta et al. 2004), the Social Competence with Peers Questionnaire (Parents) (Spence, 1995), the General Affection Questionnaire (Sofronoff, Lee, Sheffield & Attwood, 2014), the Affection for Others Questionnaire for children with Asperger’s Syndrome (Sofronoff et al. 2014) and the ‘Walk in the Forest Test’, (specifically designed by Attwood to measure child understanding of affection). Children in the CBT group showed significantly greater improvements than waiting list children in overall appropriateness of affectionate behaviour; improvements in the expression of affection were maintained at a three month follow up. Significant improvements in the communication of empathy were also found at the follow up. Although the moderate sample size and the sole use of parent-report measures are obvious
limitations, this study provides tentative evidence to suggest that children with ASD can be taught to interact more appropriately with other people using a cognitive-behavioural intervention.

2.10.1.4 CBT to address obsessive compulsive disorder (OCD) symptoms in children and young people with ASD.

Lehmkuhl et al. (2008) published a single case study regarding the use of CBT in reducing symptoms of OCD in children with ASD. A 12 year old male with a diagnosis of ASD and OCD engaged in ten 50 minute individual CBT sessions. Measures, including the Children’s Yale-Brown Obsessive Compulsive Scale (Scahill et al. 1997), were completed before the child engaged with the CBT sessions and again after all ten sessions were completed. Findings showed that the participant displayed moderately severe OCD symptoms at pre-treatment, but that at post-treatment the OCD symptoms had reduced to within normal limits. Changes were maintained at a three month follow up. Similarly, a further single case study was published by Elliott and Fitzsimons (2014) regarding CBT treatment of a seven year old boy with ASD and OCD. Ten weekly individual CBT sessions were carried out in a clinical setting. The article suggests that the child made improvements in relation to OCD symptomology and that this improvement was maintained at a follow up. Further details are not provided in the paper.

Although the studies by Lehmkuhl et al. (2008) and Elliott et al. (2014) were single-subject studies and were exploratory in nature they provide preliminary evidence that CBT may be effective in reducing OCD symptoms in children and young people with ASD.

2.10.1.5 Summary of evidence in relation to LRQ1.

So far, this literature search has found promising support for the effectiveness of CBT in addressing a range of issues with children and young people with autism, including anxiety, sleep difficulties, social skills and OCD. Emotional regulation, as discussed in section 2.7, is a heterogeneous set of actions or
processes designed to influence which emotions are experienced, when and how they are experienced and how they are expressed. As discussed in section 2.7.3, emotional dysregulation is a significant difficulty for many children and young people with ASD. Emotional regulation difficulties could contribute towards some of the issues discussed in section 2.10.1, such as anxiety or social skills difficulties, but as emotional regulation is a distinct construct and a complex area, it is worthy of investigation in its own right. Addressing emotional regulation difficulties in children with ASD is important and likely to support their ability to succeed in a mainstream classroom. With this in mind, the literature review will move on to discuss the second literature review question focusing on the use of CBT to address emotional regulation skills in children and young people with ASD.

2.10.2 LRQ2: To what extent has CBT been used to address emotional regulation skills in children with ASD, and how effective has it been?

Although CBT-based approaches for children and young people with ASD may incorporate content that addresses emotional regulation deficits, there is great variability in the degree to which emotional regulation training is included in such interventions and evaluation of emotional regulation training has rarely been conducted (Mazefsky & White, 2014). This literature search found two studies regarding the use of CBT to address emotional difficulties in children with ASD (Greig & Mackay, 2005; Mackay & Greig, 2008) and one study regarding the use of CBT to specifically address emotional regulation in children and young people with ASD (Scarpa & Reyes, 2011).

2.10.2.1 Appraisal of the selected studies.

These studies were evaluated in line with the Spencer, Ritchie, Lewis and Dillon (2003) thresholds for quality of qualitative and quantitative methodologies and this analysis is displayed in Table 2 below. See Appendix 3 for further information pertaining to this.
Table 2: Overview of studies, evaluated in line with the Spencer, Ritchie, Lewis and Dillon (2003) thresholds for quality of qualitative and quantitative methodologies

<table>
<thead>
<tr>
<th>Study</th>
<th>Methodological quality</th>
<th>Appropriateness of research method to review questions</th>
<th>Focus of evidence for review method to review questions</th>
<th>Overall weight of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scarpa &amp; Reyes (2011)</td>
<td>Medium</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Greig &amp; Mackay (2005)</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Mackay &amp; Greig (2008)</td>
<td>Low</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
</tr>
</tbody>
</table>

The studies will each now be described in turn.

Scarpa and Reyes (2011) conducted a pilot RCT to investigate the efficacy of using developmentally appropriate CBT alongside parental psychoeducation with 11 young children (5 to 7 years old) with ASD to support emotional regulation skills in relation to anger and anxiety. Emotional regulation skills were measured through a scale created for this purpose by the researchers and through parental reports and parental observations. As this scale was created for this study, its reliability and validity may be called into question.

Children were randomly assigned to the CBT condition or a waitlist condition. Groups of two or three children completed nine weekly sessions of CBT focusing on
building skills through affective education, stress management and understanding the expressions of emotions. Nine weekly parent psychoeducation sessions ran alongside the child CBT sessions and parents were also able to watch their child’s sessions.

Findings from this study show that children in the experimental group showed greater improvements in emotional regulation skills compared to those in the waitlist condition. This suggests that children of this age with high functioning ASD may benefit from CBT for the regulation of emotions underpinning anger and anxiety. However, as parents attended psychoeducation sessions that ran alongside the CBT sessions, as well as being able to watch their child’s CBT sessions, it is unclear how far parental involvement as an ‘active ingredient’ will have impacted upon the findings of this study and whether a greater understanding of CBT will have supported them to perceive their child differently. As parental perceptions of child skills were measured, it is difficult to ascertain the extent to which parental involvement in the intervention influenced the findings. Therefore, further research is needed to further investigate the effectiveness of pure CBT in supporting the emotional regulation skills of children with ASD.

Scarpa and Reyes (2011) adapted a group CBT programme to a developmental level suitable for 5 to 7 year olds with autism. Although there is insufficient detail regarding the intervention and design in the aforementioned paper to replicate the intervention, it suggests that further research into the use of CBT to support emotional regulation skills with children and young people with ASD may be warranted.

Greig and Mackay (2005) carried out an exploratory single case study with a 12 year old boy (IB) with Asperger’s Syndrome (AS) in a mainstream secondary school. A baseline cognitive and educational profile showed IB to be of high ability, although problems associated with AS (such as inappropriate verbal and non-verbal communication, disruptive behaviour and difficulties with attention) were causing barriers to his learning and, as a result of this, teacher reports stated that he was not reaching his potential. Pre and post measures in three areas were obtained
using different methods: depression, anxiety and trauma using the Briere Trauma Scales (Briere, 1996), social skills through pupil and parent assessments (Spence, 1995) and observational school data.

The intervention centred around ‘The Homunculi’ (see section 2.10.3 for further information) which is a meta-cognitive visual aid to support young people in regulating thoughts, feelings and behaviours as well as problem solving and developing social skills (Greig & Mackay, 2013). This was enhanced through further tools including social stories, cartoon strips and CBT-specific behavioural tools (Attwood, 2003). IB participated in 15 therapeutic sessions. In the current context of Educational Psychology Services and given the time pressures upon them, this amount of sessions may be considered to be overly time-consuming and may not be viable in real-world settings.

The measures showed that IB’s anxiety, depression and stress reached clinical significance at pre-intervention. His anger responses were high but did not reach clinical significance. At post-intervention, his emotional states were around the mean value for his age on anxiety, depression, anger and stress. Outcomes regarding IB’s social competence suggested that he had begun to make progress in this area, although not to the same level as his emotional state outcomes.

This exploratory case study suggests promising application of The Homunculi Approach. However, all exploratory case studies share some limitations including a lack of control group and a small sample size. Additionally, a large number of sessions were required to effect these changes, and within this timescale, developmental and extratherapeutic factors may have been influential. This study used both formal and informal measurements that enabled IB’s outcomes to be compared to a standardised norm; the inclusion of qualitative information provided the researchers with richer data about the reasons behind any changes than quantitative information alone would have provided.

Mackay and Greig (2008) conducted research with 30 young people aged 8 to 18 years, individually and in groups, with a range of special needs, using The
Homunculi Approach which they detailed in a poster presentation. Around half of the sample had a diagnosis of ASD and the rest of the sample had a wide range of other difficulties. MacKay and Greig (2008) claim that statistical analysis of pre- and post- data collected using the Briere Trauma Scales (1996) showed that scores on anger, anxiety, stress and depression fell considerably. However, there was little information to describe the participants, their presenting needs and how the intervention was delivered (e.g. individually or in groups; over what period; number of sessions). Additionally, statistical information is not available and data were not presented indicating outcomes specifically for the children with ASD. Therefore the size of the effects for children with ASD is unclear due to the involvement of children without an ASD diagnosis. Additionally, given the absence of methodological detail and the incomplete data set, these claims should be treated with caution.

The studies discussed (Scarpa & Reyes, 2011; Greig & Mackay, 2005 and Mackay & Greig, 2008) have all investigated the use of CBT in addressing emotional needs in children with ASD and provide a rationale for further investigation into the efficacy of CBT with children with ASD to aid emotional regulation. Two of the studies used the novel and contemporary Homunculi Approach, a programme developed by EPs (Greig & MacKay, 2013). Yet the datasets derived from the research provide at best tentative evidence for its effectiveness with children with ASD in supporting emotional regulation, given the methodological weaknesses and the fact that the studies appeared to set out to address emotional difficulties more generally, rather than emotional regulation per se. However, due to its uniqueness as a manualised CBT programme developed for children with ASD for use within educational settings, it is worthy of further consideration as a possible intervention for improving emotional regulation and will be discussed in the following section.

2.10.3 The Homunculi Approach.

The Homunculi Approach (Greig & Mackay, 2013) is a flexible CBT program designed for children and young people with ASD to address emotional and behavioural difficulties. It offers a structured, manualised CBT intervention and has
been tested for use with primary aged pupils. Literature, including that from Charman et al. (2011), proposes that good practice in autism education involves individualisation. Therefore, individual CBT sessions are more likely to address the specific needs of the child. The Homunculi Approach offers a structured CBT intervention that can be delivered individually. Evidence from the authors (Mackay & Greig, 2008; Greig & Mackay, 2005) shows that this approach used individually has been successful in improving emotional states in a child with autism.

The authors have started to build an evidence base for this program (Greig & Mackay, 2005; Mackay & Greig, 2008) which lends support to its usefulness for children on the autistic spectrum. There remains, however, a limited amount of research and a particular lack of independent research into the use of this approach.

While small scale research (Greig & Mackay, 2005; Mackay & Greig, 2008;) suggests that The Homunculi Approach may improve emotional states such as anger, anxiety, depression and stress in youngsters with ASD, the researcher is not aware of any current research that has evaluated the effectiveness of using The Homunculi Approach to specifically support emotional regulation as a skill in its own right. Furthermore, there have been no independent evaluations of the programme for supporting children with ASD. Further information on The Homunculi Approach is provided in section 3.8.

2.11 The Knowledge Gap and Implications for Practice

The number of children with ASD educated in special schools is high in comparison with other disabilities, and therefore, providing children with ASD with the skills that they need to access a mainstream learning environment successfully is likely to be beneficial, and may, for example, support inclusion of children with ASD in mainstream classrooms through skill development. As stated by Mazefsky and White (2014), disrupted emotional regulation is likely to be a central factor in the difficult behaviour frequently seen alongside ASD. Emotional regulation is also likely to influence social-emotional adjustment and academic success (Macklem, 2008).
Samson et al. (2012) have highlighted the need for research into how best to support emotional regulation in children with ASD.

There is a growing body of evidence for using CBT with children with ASD. Much of this work has been carried out within clinical settings. Research from Rotheram-Fuller and MacMullen (2011) that found it “seems critical to consider schools as a primary context within which to conduct CBT interventions” (p.269). In prior research regarding CBT and children with ASD, the majority of the CBT has been conducted in group sessions. With guidance stating that unique individualisation addressing all of the child’s needs is best practice for children with autism, individualising CBT sessions to encompass the needs of each child may be a preferred strategy. Research from Charman et al. (2011) stated that good practice in autism education goes beyond individualisation of the curriculum and towards a unique autism curriculum.

Barnard et al. (2002) state that the rate of ASD reported by teachers is more than three times higher in primary than in secondary mainstream schools. This may be attributed to different factors including improved diagnosis, or more secondary aged pupils with ASD being excluded or educated within specialist provisions. The exact reasons why this is the case are unclear, but there is a need to address issues that may affect the ability of children with ASD to succeed in a mainstream classroom and equip the children with the skills that they need before leaving primary school. Therefore, research with children in year four, five or six is needed in order to find out whether CBT can be effective with this age group to support emotional regulation. As national examinations are taken during year six, the researcher chose to avoid working with this age group.

The Homunculi Approach (Greig & Mackay, 2013) is designed for children and young people with ASD. It has currently been evidenced by the authors in schools in Scotland over periods of at least 10 sessions and shows promise that the programme can support social and emotional development in children and young people with ASD. Given the current context of Educational Psychology Services and the movement towards the traded model, it would be even more useful to
practitioners if this programme could be used as a brief intervention over five sessions.

Therefore, the current piece of research aims to explore the efficacy of using individualised CBT (The Homunculi Approach) over five sessions to address emotional regulation difficulties in year four and five children with ASD.

2.12 Contribution to Knowledge

This study will add to the growing body of evidence regarding CBT and children with ASD, specifically providing an insight into whether CBT can support children with ASD who have emotional regulation difficulties and whether five individualised sessions of CBT are feasible and useful. This research is likely to influence further research into interventions for children with ASD and emotional regulation difficulties.

The role of the educational psychologist includes delivering therapeutic work with children and young people, using knowledge and awareness of research evidence to inform interventions. The literature review highlights a gap in knowledge regarding the use of CBT with children with ASD and emotional regulation difficulties. This research aims to provide findings of a practical nature which will contribute to the research base for using CBT with children and young people with ASD. It is anticipated that this research will be useful to educational psychologists supporting children and young people with ASD.

2.13 Social/Economic Impact of New Knowledge

Over twenty percent of children in all special schools have ASD as their primary need (DfE, 2012) and 1 in 3 children in special schools have educational needs related to ASD compared to 1 in 128 in mainstream schools (Barnard et al. 2002). A potential reason for the under-representation of children with ASD in mainstream schools may be due to the challenging behaviours displayed by children and young people with autism, which could be influenced by a difficulty in self-regulating their emotions. This view is supported by the exclusion statistics presented in section
2.5.3, which suggest that children with ASD who may be able to access mainstream schools in terms of academic ability often face additional difficulties in terms of managing their emotions and behaviours appropriately. Finding appropriate ways to support the ability of children with ASD to regulate their own emotions more successfully will first and foremost support their mental health and emotional wellbeing. Additionally, it will enable them to improve their ability to engage and learn in school and will have a positive impact on educational progress.

In the long term, if this research proves successful and viable, it may lead to further studies exploring the use of CBT with children and young people with ASD to support emotional regulation. If such programmes are successful and rolled out across other schools it may reduce the need for some children with ASD to be educated in specialist provisions, enabling them to remain in mainstream settings.

**2.14 Research Aims and Research Questions of Empirical Work**

The main aim of this research study is to explore the effectiveness of a CBT approach in supporting emotional regulation in primary aged children with ASD.

For the researcher to make a contribution to the knowledge base, the following questions will be addressed:

1) What is the level of self-reported, school staff reported and parent reported emotional regulation in a sample of children with ASD before and after individualised, in school CBT based approach sessions?

2) To what extent are any gains from individualised, in school CBT based approach sessions maintained at follow up?

3) What sorts of adaptations are necessary to enable primary-aged children with ASD to successfully access CBT based approaches?

The next chapter will describe in detail the methodological approach used to address these research questions.
Chapter 3: Methodology

3.1 Chapter Outline

This section provides a critical discussion of the methodology employed to answer the research questions that have arisen from the literature review. The chapter begins with an outline of the rationale of the study, aims, research questions and the ontological, epistemological and axiological stance of the researcher. This is followed by an overview and critical discussion of the case study methodology used in this research study. The sampling and participant recruitment strategies are presented and discussed, followed by a consideration of the ethical issues relating to this study and a description of the methods used for data collection and analysis. Finally, a critique of the methodology is presented.

3.2 Rationale

This research investigated how effective individualised, in-school, brief CBT may be in developing emotional regulation in children with autism. This area is of particular and growing importance due to the increasing number of children with ASD who are educated in specialist provisions as a result of the breakdown of mainstream school placements, often due to challenging behaviour.

Research from the DfE (2012) showed that 29% of children with a diagnosis of autism are educated within specialist provisions. Green et al. (2005) showed that 27% of children with autism in Britain had been excluded from school at some point during their education, in comparison with 4% of children without ASD. More recent research from Ambitious About Autism (2014) shows that 20% of parents of children with ASD report that their child has been excluded in the past 12 months, and that four out of 10 children with autism have been excluded informally and therefore illegally during their time at school. Green et al. (2005) found that 51% of parents of children with ASD reported that their child had difficulties with their emotions and 71% reported that their child had difficulties managing their own behaviour. It seems likely that some of the behaviour that is displayed by some
children with ASD is challenging for mainstream settings to cope with and to meet their needs effectively. This is likely to have an influence upon the type of provision in which a child is educated.

Research regarding children and young people with ASD highlights the importance of using unique, individualised approaches when teaching and providing support. As demonstrated in the literature review, there is a growing body of evidence for using CBT with children with ASD although little attempt to investigate the use of CBT with children with ASD to aid emotional regulation, and no attempt to investigate this with children in year 4 or year 5 (aged 8, 9 or 10). This research attempted to begin to fill some of the gaps in the research that have been identified. Unlike the one other existing piece of research which investigated the use of CBT to develop emotional regulation skills in 5-7 year olds (Scarpa & Reyes, 2011), this piece of research specifically investigated the use of CBT with key stage 2 pupils (8 and 9 year olds), and was carried out within schools.

3.3 Research Aims

The main aim of this research study is to explore how effective a CBT approach may be in supporting emotional regulation in primary aged children with ASD. In order to fully explore this, it was necessary to explore the perceptions of people close to the pupil (parents and teachers) regarding the effectiveness of the intervention as well as investigating the perceptions of the pupils themselves. It is important to consider multiple sources of data in order to inform an evolving understanding of this research area.

There are three main aims for this piece of research:

1) To examine how useful CBT based approaches are in addressing the emotional regulation of children with ASD.

2) To see if CBT based approaches appear to have any impact on the levels of emotional regulation in a small sample of primary aged pupils with a diagnosis of ASD.
3) To successfully adapt a CBT based approach to support emotional regulation in primary aged children with ASD.

3.4 Research Questions

1) What is the level of self-reported, school staff reported and parent reported emotional regulation in a sample of children with ASD before and after individualised, in school CBT based approach sessions?
2) To what extent are any gains from individualised, in school CBT based approach sessions maintained at follow up?
3) What sorts of adaptations are necessary to enable primary-aged children with ASD to successfully access CBT based approaches?

This research enabled a rich picture to be built up regarding the use of CBT based approaches with three children with ASD and difficulties regulating emotions. This contributed to knowledge regarding the use of CBT based approaches with children with autism, with a unique contribution in the form of exploring how these approaches can be used in school with children with ASD in year four or year five to support their abilities to regulate their emotions.

3.5 Philosophical Considerations

3.5.1 Ontological position.

Ontology refers to the belief that people have about ‘what is’. Easton (2010) suggests that a critical realist epistemology reflects the ontological assumption that a reality exists which is independent of observers, but that this reality is difficult to comprehend. The researcher, as a critical realist, acknowledges that the world is socially constructed, but not entirely socially constructed (Easton, 2010). The researcher also acknowledges that our own presence as researchers can influence what we are trying to measure. Therefore, collecting both qualitative and quantitative data allows a more realist and objective perspective to be gained.
3.5.2 Epistemological position.

The term ‘epistemology’ refers to the researcher’s understanding of the nature of knowledge: the belief that people have about how knowledge and understanding are gained. The epistemological stance that is taken during research influences how the research is carried out, analysed and understood and therefore it is important to keep it in mind throughout the research process.

The epistemological position assumed for this research is that of critical realism (Robson, 2002). Critical realists believe that there is an independent reality that can be studied by science, whilst being critical of the ability to be certain of reality. According to Sayer (1992), there are some basic assumptions of critical realism, centring upon the premise that the world exists independently of human knowledge about it, and that our knowledge of the world is fallible and laden with theory. In addition to this, Sayer (1992) states that in a critical realist perspective, the production of knowledge (which is largely linguistic) is a social practice, and the nature of language and the way people communicate are not incidental to what is known and communicated. As all measurement is fallible, multiple measures and triangulation are essential in research undertaken from a critical realist stance.

According to Bunge (1993), our beliefs and expectations can affect the way in which we perceive facts. CBT is based upon the premise that faulty thinking (i.e. faulty perceptions of facts) leads to inappropriate feelings and dysfunctional behaviour. According to Robson (2002), realism provides a way to approach the open and uncontrolled situations of the real world in which research is taking place. As suggested by Madill, Jordan and Shirley (2000), critical realism allows an inherent subjectivity in the production of knowledge. Therefore, the therapist and child working together to realign faulty perceptions and thoughts with more appropriate assessments of situations recognises the premise that there is an inherent subjectivity in the production of knowledge, which will then impact upon feelings and behaviour. The critical realist stance enables the researcher and pupil to work together to consider realities beyond those that are socially constructed, whilst exercising caution regarding the overgeneralisation of principles. It also enables the
researcher to explore the wider picture of what works for some people in some contexts by incorporating the perspectives of different participants (Robson, 2002).

This research sought to understand the realities constructed by the individual children involved in the study, particularly regarding whether they felt the CBT based approach had supported their ability to regulate their emotions. Triangulation of this data with parents and teachers enabled an objective viewpoint to be considered.

3.5.3 Axiology.

The term ‘axiology’ refers to the impact of the values and beliefs that are held by the researcher whilst conducting and analysing the research. It is important for the researcher to work with methodology which is appropriate to the area of enquiry and to their way of seeing the world. In conducting and analysing research, it is important for the researcher to be aware of the values and beliefs that they hold and how they may affect the way the data is gathered, analysed and interpreted, and what conclusions are drawn. The beliefs held by the researcher that permeate the research are discussed below.

This research concerns a vulnerable group of children in society: those with ASD. Prior to embarking upon the Doctorate programme the researcher worked as a learning support assistant in a school for children and young people with ASD; this increased her understanding of the needs of this vulnerable and diverse group of children and young people, and influenced her view that children and young people with autism may benefit from explicit teaching regarding how to self-regulate their emotions more effectively. Whilst working in this role, the researcher noticed how emotional regulation difficulties appeared to be hindering one particular child’s learning progress, social skills and emotional wellbeing, and felt that many of the interventions in place for him tended to ‘mask’ these difficulties rather than address them directly. This experience enhanced the determination of the researcher to explore interventions that might support the development of emotional regulation skills in children with ASD.
Further experience in the EP role has influenced the researcher’s view that people have the ability to develop new skills, as long as they are taught at a suitable level for them. Therefore, the researcher views a child’s ‘area of need’ or ‘areas for development’ as ‘untapped skills’, and believes that given the right input, children have the ability to develop new skills. Experience whilst working as a TEP has further motivated the researcher to facilitate positive change for the pupils with whom she works, both emotionally and educationally. Enabling children to feel comfortable in the classroom and to process situations positively is important to enhancing their ability to learn effectively, in order to give children and young people with ASD the best chance to live an independent life.

It is acknowledged through legislation that all children and young people have the right to education, inclusion and to achieve and be happy. This includes children with ASD. A notable legislative framework for this research is the Salamanca Statement and Framework for Action on Special Needs Education (UNESCO, 1994) which promotes inclusive education for all. However, as highlighted in the literature review, research from the DfE (2012) showed that 29% of children with a diagnosis of autism are educated within specialist provisions, and in recent years, according to the DfE (2012), ASD is in the most frequent type of primary need at 20.4% in all special schools. This shows that currently, children and young people with ASD are not included in mainstream school as much as they could be.

These values and beliefs have influenced the way in which the research was conducted and analysed. School staff members participating in the study were aware of the value that the researcher places upon the education of children with ASD, supporting them emotionally to begin to build the skills that they will need to live independent lives, and the importance of finding suitable and effective ways to equip children with ASD to be able to do this effectively. The researcher was very clear in conversations with school staff, both when introducing the research project and when meeting then informally, that giving full and honest answers to accurately represent their views was extremely important. Finding appropriate ways to support the emotional regulation of children with ASD is very important to
the researcher, and exploring whether CBT is useful or not to support emotional regulation of children with autism is important.

3.6 Research Design

Gerring (2004) defines a case study as ‘an intensive study of a single unit where the purpose is to shed light on a larger class of (similar) units’ (p.342). Easton (2010) expands upon this and defines case study research as the investigation of one or a few social entities or situations, through the collection of multiple sources of data, with an iterative research process supporting the development of a holistic description of such entities or situations. Yin (2014) expands on this idea further to suggest that a case study is an empirical inquiry that ‘investigates contemporary phenomenon in depth and within its real world context, especially when the boundaries between the phenomenon and the context may not be clearly evident’ (p.16).

Case study research allows a researcher to work with one or a small number of cases in order to tease out and disentangle a complex set of factors or relationships (Easton, 2010). This type of research enables the researcher to gain an insight into the nature of phenomena and is particularly useful when there is a need to understand a situation in great depth (Noor, 2008). Yin (2014) suggests that case studies are carried out to increase understanding of real world cases.

It is widely acknowledged that case study research faces some main criticisms regarding a perceived lack of rigour to the case study methodology, and limitations in terms of generalisation. These will be discussed further in the section of this paper dedicated to a critique of the methodology. Regardless of some perceived limitations of this research method, case study research enables effects to be observed in real-life contexts (Cohen, Manion & Morrison, 2007) and is particularly useful in research that aims to answer ‘how’ and ‘why’ questions. Other methodologies were considered for use within the current research, particularly the single-case experimental design, which would have compared observations at a baseline to observations after the intervention was delivered. However, this was
considered to be less useful than a case study design because the quantitative component was designed to be a fairly small element of this study. The aim of the research was to gain a holistic picture of how and why CBT based approaches may be effective in supporting children with ASD to regulate their emotions more easily. Therefore, case study research is appropriate for the current study due to its focus on answering a ‘how’ question, ‘How effective is CBT in supporting emotional regulation in children with ASD?’

The systematic literature review presented in section 2.10 found a gap in the knowledge regarding how effective CBT can be in supporting emotional regulation in primary-aged children with ASD. Small scale research of an exploratory nature is therefore appropriate to investigate the application of CBT to children with autism and difficulties regulating their emotions in their real-life context and will allow researchers to begin to investigate this phenomenon in depth. Due to the limited previous research in this area, small-scale research is necessary to look at the viability of using CBT for emotional regulation amongst children with ASD. As the boundaries between the phenomenon and the context may not be sharply distinguishable (as is often the case in the real world, according to Yin (2014)), case study methodology was deemed to be appropriate for exploring the research questions in this piece of research.

3.6.1 Case study design

The methodology for this study is that of an exploratory multiple embedded case study design. The features of this design will now be explained in more depth.

3.6.1.1 Case study protocol.

According to Yin (2014), a case study protocol is an effective way of increasing the reliability of case studies, and the development of a case study protocol is critical in a multiple case design. The case study protocol is a set of comprehensive guidelines and contains information to be followed whilst carrying out the research, supporting the researcher to remain on track throughout the research. Yin (2014)
states that the case study protocol should contain an overview of the case study, data collection procedures, data collection questions and a guide for the case study report. Table 3 illustrates the case study protocol for this study and describes the stages of the research to provide a clear illustration of how the research has been conducted. This builds the robustness and the reliability of the case study design and enables the study to be replicated more easily.

Table 3: Case Study Protocol

<table>
<thead>
<tr>
<th>Section of protocol</th>
<th>Stage of case study research</th>
<th>Rationale / Activity</th>
</tr>
</thead>
</table>
| Background / Overview | Stage 1: Research area identified | • CBT is being increasingly used with children and young people but mostly within clinical settings. Some research has been carried out to investigate the use of CBT with children and young people with ASD.  
• There is currently no published research relating to the use of in-school CBT with year 4 and 5 pupils with ASD to support emotional regulation skills. |
| Data collection procedures | Stage 2: Literature review and research questions formulated | • Findings of the literature review led to the identification of a gap in the knowledge and the development of research questions to guide the research to offer a unique contribution. |
| | Stage 3: Research methods selected | • Exploratory case study design selected due to a lack of previous research in this area- multiple embedded case study design, with a critical realist epistemological position assumed. |
| Stage 4: Participant recruitment | • Schools contacted, research discussed with SENCO and permission gained to conduct research in the school  
• Participant information sheets and consent sheets distributed to pupils who met criteria and the pupils’ class teachers  
• Participants randomly selected from those who returned written consent forms  
• Informed written consent gained from the class teacher |
| Stage 5: Initial checklists completed | • Initial emotional literacy checklists completed by:  
  Child  
  Parents  
  Teacher |
| Stage 6: Five CBT sessions | • Five one hour sessions of CBT based upon The Homunculi Approach, carried out in school, individualised for each child  
• Youth Session Rating Scale (SRS) completed at the end of every session in order to inform planning of future sessions |
| Stage 7: Post CBT checklists | • Emotional literacy checklists completed again by:  
  Child |
| Guide for case study report | stage 11: Feedback | • Written feedback to schools and parents  
• Child-friendly written feedback to participants |
| Data collection questions | stage 9: Data analysis | • Thematic analysis of interview transcriptions  
• Exploratory data analysis and descriptive analysis of emotional literacy checklist |
| | stage 10: Findings and discussion | • Research questions answered  
• Implications of findings, future research directions and conclusions evaluated |
| Data collection questions | stage 8: Two month follow up data collection | • Emotional literacy checklists re-completed  
• Semi-structured interviews conducted with pupils and class teachers  
• Interviews recorded and transcribed |

### 3.6.1.2 Theoretical propositions.

Propositions are working hypotheses or formulations that direct the attention of the case study towards what should be focused on. According to Yin (1994), existing theory informs propositions, and propositions inform subsequent data collection and data analysis. Although there is limited research in this specific research area, a number of propositions informed by the research available have been identified and are outlined below:
1. **Self-reported emotional regulation may improve after in-school sessions with a CBT-based approach**

Scarpa and Reyes (2011) found that CBT improved emotional regulation in five to seven year olds with ASD, although they did not measure child perceptions. Greig and Mackay (2005) found that pupil-report measures relating to social competence outcomes improved post-intervention, using The Homunculi Approach in a single case study. In the current study, on the basis of the outcomes from these studies, we might predict that child-reported emotional regulation will improve after the sessions. It is possible that Hawthorne effects (Franke & Kaul, 1978) or social desirability bias may play a part in influencing pupil self-report measures and the researcher attempted to limit the effects of this through conversations with the pupils reinforcing the importance of honest answers. For further information pertaining to this, please see sections 5.5.1.3 and 5.5.1.4 (Discussion).

2. **Parent-reported emotional regulation may improve after in-school sessions with a CBT-based approach**

CBT sessions for five to seven year olds with ASD accompanied by psychoeducation for their parents led to improvements in emotional regulation as reported by parental observations and parental reports (Scarpa & Reyes, 2011). Parental psychoeducation is not within the scope of the current study and so this may affect their perceptions of any changes in emotional regulation in their children, although checklists specifically designed to measure parental perceptions of their child’s emotional regulation skills may support parents in reporting their views.

3. **Teacher-reported emotional regulation may improve after in-school sessions with a CBT-based approach**
Scarpa and Reyes (2011) found that CBT supported emotional regulation in five to seven year olds with ASD, as measured by parental and researcher reports. Although teacher’s views were not measured by Scarpa and Reyes (2011), it is likely that teachers of the pupils in the current research may notice an improvement in pupil emotional regulation skills, as the teachers of the participants will be well placed to notice any changes.

4. Sessions may be adapted to enable children to successfully access the approach

Although The Homunculi Approach (Greig & Mackay, 2013) is designed to meet the learning styles of children on the autistic spectrum, research from Charman et al. (2011) states that good practice in autism education goes beyond individualisation and towards a unique autism curriculum. Sessions are likely to be personalised and adapted in order to encompass the individual needs of each child, informing research question 3. As The Homunculi Approach (Greig & Mackay, 2013) is a visual CBT intervention, specifically designed to meet the needs of those with ASD, many of the adaptations to CBT interventions recommended by Attwood (2003) and Rotheram-Fuller and Macmullen (2011) are taken into account. However, for the purpose of this research project, further adaptions were made prior to the intervention. For further information relating to this, please see section 3.10.

Table 4 details the propositions and shows how they link to the research questions.
Table 4: Propositions

<table>
<thead>
<tr>
<th>Proposition area</th>
<th>Related research questions</th>
</tr>
</thead>
</table>
| 1. **Self-reported emotional regulation may improve after in-school sessions with a CBT-based approach** | 1. What is the level of self-reported, school staff reported and parent reported emotional regulation in a sample of children with ASD before and after individualised, in school CBT based approach sessions?  
2. To what extent are any gains from individualised, in school CBT based approach sessions maintained at follow up? |
| 2. **Parent-reported emotional regulation may improve after in-school sessions with a CBT-based approach** | 1. What is the level of self-reported, school staff reported and parent reported emotional regulation in a sample of children with ASD before and after individualised, in school CBT based approach sessions?  
2. To what extent are any gains from individualised, in school CBT based approach sessions maintained at follow up? |
3. Teacher-reported emotional regulation may improve after in-school sessions with a CBT-based approach

1. What is the level of self-reported, school staff reported and parent reported emotional regulation in a sample of children with ASD before and after individualised, in school CBT based approach sessions?

2. To what extent are any gains from individualised, in school CBT based approach sessions maintained at follow up?

4. Sessions may be adapted to enable children to successfully access the approach

3. What sorts of adaptations are necessary to enable primary-aged children with ASD to successfully access CBT based approaches?

**3.6.1.3 Exploratory case studies.**

According to Yin (2014), there are four main different types of case study: exploratory, explanatory, descriptive and evaluative. The appropriate type of case study for this piece of research is an exploratory case study. Exploratory case studies investigate distinct phenomena characterised by a lack of preliminary research, and are used to explore a field which is relatively new to research (Streb, 2010). This piece of research explored the use of in-school CBT with year 4 and year 5 children with a diagnosis of ASD and difficulties regulating their emotions. This is
an under-researched area and therefore in depth research is necessary prior to being able to expand this research area and carrying out wider scale studies.

According to Yin (2014), propositions are not always necessary in exploratory research. In this case, however, there was one particular previous piece of similar research (Scarpa & Reyes, 2011) which has provided sufficient information to develop tentative propositions prior to data collection.

**3.6.1.4 Multiple embedded case study designs.**

Yin (2014) outlined four main types of case study design:

- Single-case holistic design
- Single-case embedded design
- Multiple-case holistic design
- Multiple-case embedded design

Multiple-case designs are utilised when the piece of research contains more than a single case, and the use of multiple-case designs has increased over recent years (Yin, 2014). In a holistic design there is one unit of analysis and the study is usually qualitative. In an embedded design there are multiple units of analysis and both qualitative and quantitative data gathering methods can be used.

As is the case with all research designs, there are both advantages and disadvantages to using a multiple-case study design. The use of more than a single case makes the methodology clearer and more replicable (Yin, 2014) and the evidence from multiple cases is often considered more compelling and the overall study considered more robust (Herriott & Firestone, 1983). On the other hand, multiple-case study designs can require extensive resources over time.

For this research, a multiple-case embedded design was deemed appropriate and gathered data to generate findings that were likely to be similar. Yin (2014) states that the replication logic of multiple case studies is similar to that of multiple experiments, and replications can either be literal, predicting similar results, or
theoretical, predicting contrasting results for certain reasons. In this study literal replication was used; participants were deliberately chosen for their similarity in age and diagnosis and similar results were predicted. It is acknowledged that due to the different school settings and contexts, as well as individual differences between the participants, some variations were likely. The number of cases deemed sufficient and necessary for this study was considered carefully. Three cases were considered to be manageable within the timescale available whilst allowing and preparing for the possibility of one participant withdrawing from the research, meaning that two participants would be left in the study. It is important to note that the time constraints of this piece of research affected the number of cases selected. Within this research, there was a follow-up two months after the CBT sessions were completed to see if any changes were long-lasting. It would have been helpful to be able to do further follow ups, for example after six months and then after a year, but again the time constraints of this research limited opportunities for this and so this was unable to be done.

3.6.1.5 Units of analysis.

Units of analysis provide a focus to guide the data collection. The following units of analysis were used: child self-reported changes in emotional regulation; teacher perceptions of impact of CBT based approach on child’s emotional regulation; parent perceptions of impact of CBT based approach on child’s emotional regulation; and adaptations required of CBT based approach made in light of observations and feedback. The following figure illustrates the multiple-embedded case study design and units of analysis.
<table>
<thead>
<tr>
<th>Context: Primary school</th>
<th>Unit of analysis 1:</th>
<th>Child self-reported changes in emotional regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child A</td>
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<table>
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<tr>
<th>Unit of analysis 2:</th>
<th>Teacher perceptions of impact of CBT based approach on child’s emotional regulation</th>
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<tr>
<th>Unit of analysis 3:</th>
<th>Parent perceptions of impact of CBT based approach on child’s emotional regulation</th>
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<tr>
<th>Unit of analysis 4:</th>
<th>Adaptations required of CBT based approach in light of observations and feedback</th>
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<tbody>
<tr>
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<table>
<thead>
<tr>
<th>Context: Primary school</th>
<th>Unit of analysis 1:</th>
<th>Child self-reported changes in emotional regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child B</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Unit of analysis 2:</th>
<th>Teacher perceptions of impact of CBT based approach on child’s emotional regulation</th>
</tr>
</thead>
<tbody>
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<td></td>
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<table>
<thead>
<tr>
<th>Unit of analysis 3:</th>
<th>Parent perceptions of impact of CBT based approach on child’s emotional regulation</th>
</tr>
</thead>
<tbody>
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<table>
<thead>
<tr>
<th>Unit of analysis 4:</th>
<th>Adaptations required of CBT based approach in light of observations and feedback</th>
</tr>
</thead>
<tbody>
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<table>
<thead>
<tr>
<th>Context: Primary school</th>
<th>Unit of analysis 1:</th>
<th>Child self-reported changes in emotional regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child C</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Unit of analysis 2:</th>
<th>Teacher perceptions of impact of CBT based approach on child’s emotional regulation</th>
</tr>
</thead>
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<table>
<thead>
<tr>
<th>Unit of analysis 3:</th>
<th>Parent perceptions of impact of CBT based approach on child’s emotional regulation</th>
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<table>
<thead>
<tr>
<th>Unit of analysis 4:</th>
<th>Adaptations required of CBT based approach in light of observations and feedback</th>
</tr>
</thead>
<tbody>
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</table>

**Figure 2: Multiple embedded exploratory case study**
3.6.1.6 Quantitative and qualitative data collection.

Although it was initially believed that case studies involved the collection and analysis of only qualitative data, the use of both quantitative and qualitative data has recently become much more widely accepted. Gerring (2007) states that a key strength of the case study methodology is its flexibility in being able to employ a wide variety of data gathering and data analysis techniques from both the qualitative and the quantitative domains. Robson (2011) and Yin (2014) support this view, agreeing that case studies can make good use of both qualitative and quantitative data.

The current research collects quantitative and qualitative data within a case study design, valuing the role of both types of data sources. The qualitative data was used, in part, to explain the quantitative data.

3.6.1.7 Triangulation.

The term ‘triangulation’ refers to the use of multiple sources to enhance the rigour and validity of a piece of research (Robson, 2011). Denzin (1988) outlined four main types of triangulation, two of which have been used in the current research: data triangulation and methodological triangulation. Methodological triangulation in this research involved the combination of quantitative and qualitative approaches. Data triangulation involved the triangulation of parent views, pupil views and teacher views of the effect of CBT on the child’s emotional regulation skills, both qualitatively and quantitatively. Whilst triangulation improves the rigour of the research (Robson, 2011), it is possible that data triangulation enables discrepancies and disagreements to be found between multiple data sources. It is therefore crucial for the researcher to maintain a critical realist perspective in interpreting and analysing such data in order for a holistic picture to be developed.
3.6.2 Sampling and participant recruitment.

3.6.2.1 Selection.

In this research, the ‘cases’ refer to the CBT based approach used with year 4 or year 5 children with a diagnosis of ASD and with difficulties regulating their emotions. Therefore, the researcher aimed to recruit participants matching these criteria. Due to the fact that CBT is predominantly a ‘talking therapy’, the participants also needed to be able to cope with the language demands of CBT; this was informed by teacher perceptions.

Opportunity sampling was used for participant recruitment. As criteria were quite specific and as the researcher had a limited number of contacts within the local authority in which she was on placement at that time, it was not easy to recruit participants within the researcher’s local authority (LA) within project timescales. Following consultation with the researcher’s supervisor and co-supervisor, schools in other local authorities who had experience of working with primary aged children with ASD were approached. Ultimately, three pupils were recruited from the researcher’s local authority (LA 1), one of whom took part in the pilot study. Another pupil was recruited from another local authority (LA 2). As it was not possible to recruit participants from a single setting, this study is mindful of variables relating to context. Overall, one case was involved in the pilot study, and three cases were involved in the main study.

3.6.2.2 School information.

The two schools recruited for the study were in different local authorities. According to an Ofsted report from July 2012, school 1 (in LA 1) is rated as a good school and is in an area of favourable socio-economic status. It is a much larger than average primary school and almost all pupils are of White British heritage, although the number of children who speak English as an additional language is increasing. The number of pupils who receive free school meals is well below
average. The proportion of pupils who are disabled, on school action/school action plus or who have a statement of special educational needs is well above average. School 1 has a designated provision for five to eleven year olds with ASD.

According to their Ofsted report from November 2012, School 2 (in LA 2) is an average sized primary school in an area where many pupils are likely to experience high levels of social and economic deprivation. The number of pupils who receive free school meals is well above average and around a third of pupils speak English as an additional language. The proportion of pupils who are on school action or school action plus or have a statement of special educational needs is well above average. School 2 is a designated resource provision for pupils with ASD or speech and language difficulties.

Two of the participants attended School 1, and one participant attended School 2. All three were educated in the mainstream provision. Key information relating to each participant is given in the table below.

**Table 5: Outline of participants**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Child 1 (pilot study)</th>
<th>Child 2</th>
<th>Child 3</th>
<th>Child 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>Pilot school</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Pseudonym</td>
<td>Zoe</td>
<td>Arthur</td>
<td>Bobby</td>
<td>Connor</td>
</tr>
<tr>
<td>Gender</td>
<td>Female</td>
<td>Male</td>
<td>Male</td>
<td>Male</td>
</tr>
<tr>
<td>Age</td>
<td>Year 5</td>
<td>Year 5</td>
<td>Year 5</td>
<td>Year 4</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>White British</td>
<td>White British</td>
<td>White British</td>
<td>White British</td>
</tr>
<tr>
<td>Setting</td>
<td>ASD resource provision</td>
<td>Mainstream primary</td>
<td>Mainstream primary</td>
<td>Mainstream primary</td>
</tr>
<tr>
<td>Number of CBT sessions</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>
The following flow chart (figure 3) shows how participants were recruited.

**Stage 1**
• Headteacher consent gained

**Stage 2**
• Participant information sheets and consent forms distributed to parents of all children with a diagnosis of ASD and difficulties regulating emotions that teachers think would be able to cope with the language demands of CBT based approaches.

**Stage 3**
• Three children will be randomly selected from those consenting three weeks after consent forms given out

**Stage 4**
• Screening of children randomly selected. Inclusion criteria: diagnosis of ASD, teacher report showing that the child has the appropriate level of language skills to cope with the demands of CBT, completion of Emotional Literacy checklists (Faupel 2003) to identify significant difficulties with emotional regulation

**Stage 5**
• Consent gained from class teacher and verbal assent from the children selected.

**Figure 3: Identification of primary aged participants (in year four or five)**

In order to meet inclusion criteria, participants had to be in year four or year five, have a diagnosis of ASD, have difficulties regulating their emotions and be able to cope with the language demands of CBT based approaches, according to teacher reports and screening on pre-intervention measures (see section 3.6.2.1 for further details). The researcher decided to work with year four and five pupils for three main reasons. Firstly, a prior study had investigated the use of CBT with key stage one children (aged five to seven years old) with ASD to support emotional regulation and so the researcher chose instead to focus on key stage two children. Secondly, it is considered that by age eight, children are in the concrete operational stage of cognitive development (Piaget, 1973) and are beginning to think about how other people might think and feel which will be beneficial in CBT sessions (although it is likely that children with ASD will need explicit teaching and support
to do this). Finally, as children in year six have to sit examinations, it was decided to avoid year six children and focus upon those in year four and five.

If, during the screening process, completion of the emotional literacy checklists showed that emotional regulation was not a difficulty for the child (i.e. scores were not below the ‘average’ range), another child was randomly selected. This was explained to parents prior to them giving informed consent. If any child was not to be included, feedback from inventories was made available to parents via a member of staff in school and a letter was sent to parents providing details of a contact member of staff in school with whom the researcher liaised as appropriate and who could provide more information if requested.

3.7 Data Gathering Methods

Both qualitative and quantitative data gathering techniques were used. As discussed earlier, it is now more widely accepted to use both qualitative and quantitative data gathering methods in case study research (Gerring, 2007; Robson, 2011; Yin, 2014), enabling a more comprehensive understanding of the research area than either approach alone would generate (Creswell & Clark, 2003).

For each case study, a range of data was collected:

- Completion of Faupel (2003) Emotional Literacy Checklists by pupil, parents and class teacher pre-CBT based approach sessions
- Completion of Faupel (2003) Emotional Literacy Checklists by pupil, parents and class teacher immediately after the block of CBT based approach sessions
- Completion of Faupel (2003) Emotional Literacy Checklists by pupil, parents and class teacher two months after the block of CBT based approach sessions
- Semi-structured interview with pupil two months after the block of CBT based approach sessions
• Semi-structured interview with class teacher two months after the block of CBT based approach sessions
• Researcher diary- a reflective log
• Materials from sessions

The data gathering methods utilised in this research project are outlined in the table below:

**Table 6: Data gathering methods**

<table>
<thead>
<tr>
<th>Research question</th>
<th>Data gathering methods</th>
</tr>
</thead>
</table>
| What is the level of self-reported, school staff reported and parent reported emotional regulation in a sample of children with ASD before and after individualised, in school CBT based approach sessions? | • Emotional regulation checklists  
• Semi-structured interviews with child  
• Semi-structured interviews with child’s teacher |
| To what extent are any gains from individualised, in school CBT based approach sessions maintained at a 2 month follow up? | • Emotional regulation checklists  
• Semi-structured interviews with child  
• Semi-structured interviews with child’s teacher |
| What sorts of adaptations are necessary to enable primary-aged children with ASD to successfully access CBT based approaches? | • Researcher diary/ reflective log  
• Youth Session Rating Scale (SRS) interpretation (Miller & Duncan, 2000)- (used to inform the development of the intervention and not directly analysed) |
Further information pertaining to the data gathering methods is discussed in more detail below.

3.7.1 Emotional regulation measures.

3.7.1.1 Completion of Faupel checklists.

The Emotional Literacy Checklists (Faupel, 2003) cover five dimensions of emotional literacy: self-awareness, self-regulation, motivation, empathy and social skills. The checklists consist of items that are considered appropriate and adequate measures of the five underlying principles of emotional literacy (Goleman, 1996). The checklists designed for pupils aged three to eleven were used during this research. As this study is investigating the effects of the intervention upon emotional regulation skills, the items on the checklists of particular interest to this research are those that cover self-awareness and self-regulation skills, in line with the definition of emotional regulation presented in section 2.7 (Eisenberg et al. 2004). Self-awareness is of interest to the current study due to the role of this skill in maintaining emotions to support emotional regulation, and so to do this effectively, a child is likely to need a level of self-awareness. Self-regulation is of interest to the current study as it refers to emotional regulation achieved independently (as discussed in section 2.7.3.3). Although the items of particular interest on these checklists are those measuring self-awareness and self-regulation, the entire checklist was completed in order to provide a broader context for any changes. There are three different versions of the checklists: one for parents to complete, one for teachers and one for pupils. Completion of the checklists enabled different perceptions of the pupil’s emotional regulation skills at different time points to be provided.

The Emotional Literacy checklists were standardised using a randomly selected nationally representative sample of primary and secondary school students in the United Kingdom in 2003. Subscales in the teacher and parent checklists were considered reliable after being measured using Cronbach’s Alpha (Faupel, 2003). The validity of the checklists have been checked in two ways: firstly, the majority of
the items within the subscales were highly correlated with other items within the same subscale, implying that the items in the subscales are measuring the same underlying concepts; and secondly, factor analysis showed that the data fit ‘quite well’ with the five underlying dimensions of emotional literacy proposed by Goleman (1996). Whilst the overall emotional literacy scales were sufficiently reliable for pupil checklists, individual subscales (including the self-awareness and self-regulation subscales) were not and therefore it was not possible to report individual subscale scores for pupil checklist data.

This measure uses a forced-choice format in which statements are presented and the participant has to select one of the four response options (‘very like me’, ‘quite like me’, ‘only a bit like me’, ‘not like me at all’) for each statement. After completion, each item on the checklists was scored using the appropriate scoring key provided by Faupel (2003). Scores were then compared with a nationally representative sample by applying the scores to a norm-referenced cut off table (see appendix 4) in order to determine which category the scores fell into: well below average, below average, average, above average or well above average.

3.7.1.2 Semi-structured interviews.

The use of interviews in research allows the researcher to gather rich data. Interviews are widely used in social research, with three common types of interview: structured, semi-structured and unstructured. Structured interviews are made up of pre-determined questions presented to the interviewee in a fixed order, using fixed wording. Semi-structured interviews tend to be made up of a guide or a checklist of topics to be covered during the interview, and the wording and flow of the interview is modified during the interview to make it feel more natural. In a semi-structured interview it is possible to ask unplanned questions to follow up on what the interviewee says. Unstructured interviews are more informal and the interviewer lets a conversation develop around the area of interest (Robson, 2011).
As is the case with most data gathering methods, there are a range of advantages and disadvantages regarding the use of interviews. Interviews are a flexible and adaptable way to gather information and have the potential to provide rich, illuminating material. However, there is a lack of standardisation in interviews which raises concerns about reliability. Interviews are often time consuming and at times it may be difficult to gain cooperation from potential interviewees (Robson, 2011).

Semi-structured interviews were used for this study for a variety of reasons (see Appendix 10 for interview schedules). As highlighted by Robson (2011), semi-structured interviews are appropriate when the interviewer is closely involved with the research process (which is the case in this study), and Drever (2003) highlights that semi-structured interviews are particularly helpful in case study research. According to Robson (2011), case study designs might employ interviews to compliment other data gathering methods, which is the case in this research.

Semi-structured interviews were carried out with each pupil who participated in the sessions. Child interviews were approximately 15 minutes long each. This amount of time was deemed adequate due to the young age of the children and the fact that they were being interviewed during school time. It may be argued that 15 minutes is not long enough to fully elicit the views of children but as the researcher had recorded the child’s view in the researcher diary throughout the sessions, and the researcher had already built rapport with each child from working with them throughout the sessions, it was deemed a sufficient length of time.

Semi-structured interviews were also carried out with the class teacher. It was acknowledged that staff members have limited free time in school and so the interviews were limited to 20 minutes with each staff member. Although it would have been useful for these to be slightly longer, the constraints of real world research meant that this was not possible.
3.7.3 Researcher diary- a reflective log.

Robson (2011) states that it is good practice to keep full and complete records of all activities relating to research projects, and Coolican (2004) defines a researcher diary as a full record of all that occurs in a research study that is kept by the researcher. Keeping a diary ensures rigour in the research process (Glaze, 2002). A researcher diary was kept throughout the time when data was gathered, detailing what was observed during the sessions and any reflections. Details of conversations with other people regarding the intervention were also recorded in the researcher journal. This was used to inform the intervention. A blank format for the researcher diary is included in Appendix 5.

3.8 The Intervention

The Homunculi Approach (Greig & Mackay, 2013) (see section 2.10.3, literature review) is a flexible programme specifically geared to address the difficulties that young people on the autistic spectrum often face. Based upon an understanding of the learning styles of children and young people with autism, The Homunculi Approach combines two main fields of psychology: cognitive behavioural therapy (CBT) and metacognition. This is designed to enable children and young people who engage with this programme to think about their own thinking and empower them to change their thoughts and behaviour.

The Homunculi Approach is designed so that it can be used by a range of professionals, teachers, support workers and parents without having to go on specific training as a prerequisite to its use. The therapeutic sessions are based upon a clear set of principles and procedures, and children design their own characters based upon the problems that they wish to solve. Sessions involve visually working through the problems identified using the characters designed by the child, and evolving stories are recorded.

Greig and Mackay (2013) recommend ten therapeutic sessions with each child as a guide. However, due to the limited resources of educational psychologists, with
more services moving towards traded models of working, this research aims to see if this approach can be effective when completed over five sessions. Furthermore, the effectiveness of The Homunculi Approach has been researched in relation to whether it can improve an array of social and emotional difficulties in children and young people with ASD and a range of other needs, although not specifically with primary aged pupils with ASD to investigate whether it can be effective in improving the specific skill of emotional regulation.

This research consists of individualising and personalising five sessions based upon The Homunculi Approach with the participants. The aim of the sessions is to develop agents who have their own gadgets to complete certain missions which are identified by the child and guided by the researcher. Agents and gadgets are used with a poster depicting a cartoon drawing of the inside of a skull to develop stories in relation to creating and solving the missions. Sessions were led by the researcher and were carried out in schools during school time. Prior to conducting the sessions with the three participants, a pilot study was carried out.

3.9 Pilot Study: Zoe

A pilot study was carried out in order to trial the therapeutic sessions and to inform the design of subsequent sessions. The child involved with the pilot study was a year five girl (Zoe). She attended a large primary school in an urban area which had resource provision for pupils with ASD. Zoe attended one of the resource provisions and was educated within a small group of around nine other pupils. At the time of the intervention, Zoe was experiencing significant difficulties regulating her own emotions and was perceived by her class teacher as displaying extreme reactions to some situations, resulting in Zoe becoming particularly distressed at times during the school day.

Five sessions of the CBT based intervention were facilitated by the researcher and all sessions lasted between one hour and one hour 15 minutes. Table 7 portrays the activities completed in each session and any additional specific adaptations to the programme, to make it accessible to Zoe, are shown.
### Table 7: Pilot study activities

<table>
<thead>
<tr>
<th>Session 1</th>
<th>Homunculi activities</th>
<th>Additional activities</th>
<th>Reflections on session content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Introduction to The Homunculi video and discussion</td>
<td>Feelings work</td>
<td>Found it difficult to understand The Homunculi from the video- benefitted from discussion and explanation</td>
</tr>
<tr>
<td></td>
<td>‘Are your Homunculi working for you’ pre-programme evaluation</td>
<td>Links between thoughts, feelings and behaviour using worksheet</td>
<td>Thoughts, feelings and behaviour worksheet not particularly useful- preferred to use her own experiences</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Session 2</th>
<th>Designing agents, gadgets and missions</th>
<th>Visual prompts to support understanding of what agents/gadgets/missions were</th>
<th>Worksheets not needed for Zoe to design her gadgets/agents- preferred plain paper.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-programme evaluation</td>
<td></td>
<td>Benefitted from visual prompts to explain what agents, gadgets and missions were and what they were for.</td>
</tr>
<tr>
<td>Session 3</td>
<td>Story development – storyboard format with post it’s chosen</td>
<td>Session lasted over an hour- Zoe very engaged and completed the storyboard in the session</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>-----------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Session 4</td>
<td>Mission solutions worksheet</td>
<td>Fight/ flight response drawn and discussed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mission solutions worksheet did not seem to add anything to Zoe’s understanding</td>
<td></td>
</tr>
<tr>
<td>Session 5</td>
<td>Recapped storyboard</td>
<td>‘Are your Homunculi working for you’ evaluation</td>
<td></td>
</tr>
</tbody>
</table>
with subsequent participants. Some activities were not used with the subsequent participants as they were not deemed useful supporting Zoe to access the intervention more easily. The videos provided by The Homunculi in order to introduce the concept of little people living inside the skull were not used after working with Zoe. Zoe found it difficult to understand the concept at the rate delivered on the video. Zoe’s difficulties and the difficulties depicted in the videos differed, so the videos were not directly relevant to Zoe’s situation. She benefitted from being talked through the concept of The Homunculi, with plenty of opportunities for discussion and clarification.

3.10 Outline of the Intervention for Arthur, Bobby and Connor

Five sessions of the CBT based intervention were facilitated by the researcher and all sessions lasted around one hour. Table 8 portrays the core activities completed in each session with each participant. The Youth Session Rating Scales (SRS, Miller & Duncan, 2000) was completed by each pupil at the end of each session and enabled the researcher to understand how the child was experiencing the sessions. This was not used as primary data but was used instead as interim feedback in order to inform the intervention (in relation to research question 3).

Table 8: Outline of the core activities per session

<table>
<thead>
<tr>
<th>Session 1</th>
<th>Homunculi activities</th>
<th>Additional activities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Introduction to The Homunculi. Sample cartoon shared, idea of the little people inside the skull explained in an accessible way</td>
<td>• Introductions</td>
</tr>
<tr>
<td></td>
<td>• Discussion regarding the nature of the characters, what they may look like, size, missions, how they’re involved in</td>
<td>• Explanation of why researcher was working with pupil and plan of session discussed and negotiated. Session rules devised together.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Feelings work</td>
</tr>
<tr>
<td>Session 2</td>
<td>Session 3</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>-----------</td>
<td></td>
</tr>
<tr>
<td><strong>thoughts, feelings and behaviour and the role of the alarm</strong>&lt;br&gt;• Missions identified in relation to emotional regulation problems&lt;br&gt;• ‘Where are we now’ pre-programme evaluation</td>
<td><strong>Links between thoughts, feelings and behaviour</strong>&lt;br&gt;<strong>Homework task discussed- framed as a ‘job’ or a ‘challenge’- feelings detective</strong>&lt;br&gt;• SRS completed</td>
<td></td>
</tr>
<tr>
<td><strong>Session 2</strong></td>
<td><strong>Session 3</strong></td>
<td></td>
</tr>
<tr>
<td>• Agents and individual ‘job’ of each agent created&lt;br&gt;• Gadgets created</td>
<td>• Reminder of aims of programme and session rules. Structure of session explained and negotiated and session rules recapped&lt;br&gt;• Review and discussion of homework task&lt;br&gt;• Discussion and drawing of the fight or flight response&lt;br&gt;• Homework task set- think when you might use one of your agents or gadgets&lt;br&gt;• SRS completed</td>
<td></td>
</tr>
</tbody>
</table>

| **Session 3** | **Session 3** |
| **Session 3** | **Session 3** |
| • Decide how to plan story/missions- story board technique using post it’s or using a blank cartoon template | • Reminder of aims of programme and session rules. Structure of session explained and negotiated and session rules |
| Session 4 | Completion of story | Review and discussion of homework task
| Role play used to support understanding during story development
| SRS completed |
| Session 5 | Debriefing- 'Are your Homunculi working for you?' worksheet
| Presentation of file containing work from the sessions | Recap of story development so far
| Role play used to support understanding during story development
| SRS completed |
| Reminder of aims of programme and session rules. Structure of session explained and negotiated and session rules recapped |
| Story discussion and role play of story to practise techniques discussed in prior sessions |
The intervention used in this study was compared to a CBT session competency framework (version 3) (Fuggle, Dunsmuir, & Curry, 2013). This is designed by Fuggle et al. (2013) to be used by CBT practitioners to assess their own practice, so that essential elements of CBT practice from sessions can be reflected on. According to this framework, core therapeutic competencies should be evident in every session, and further competencies/skills are for use in some sessions. For this research, the use of this framework enabled the researcher to accurately reflect the extent to which the intervention was aligned with CBT. Table 9 below illustrates this reflection.

Table 9: CBT Aspects of Intervention

<table>
<thead>
<tr>
<th>Competency</th>
<th>Evidence from the current intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Setting the right context</strong></td>
<td></td>
</tr>
<tr>
<td>Ethical practice</td>
<td>• Informed parent consent and pupil assent gained</td>
</tr>
<tr>
<td></td>
<td>• Appropriate boundaries set with child participants</td>
</tr>
<tr>
<td></td>
<td>• The researcher (as therapist) consistently acted within limits of own practice</td>
</tr>
<tr>
<td></td>
<td>• Researcher was prepared to act appropriately if any issues arose in relation to risk</td>
</tr>
<tr>
<td>Active reference to family</td>
<td>• At times, the researcher encouraged the child to begin to consider issues from the perspective of other family members</td>
</tr>
<tr>
<td>(Parents not involved in CBT</td>
<td></td>
</tr>
<tr>
<td>sessions- beyond the scope of</td>
<td></td>
</tr>
<tr>
<td>this research)</td>
<td></td>
</tr>
<tr>
<td>Active reference to school factors</td>
<td>• Researcher demonstrated awareness of child’s school context and relationships there consistently throughout the sessions</td>
</tr>
<tr>
<td>(School staff not involved directly in the sessions—beyond the scope of this research)</td>
<td>• School factors incorporated into formulation where appropriate, discussing the impact of these upon the child, thinking about situation from perspective of teachers/peers</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>Therapeutic alliance</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Empathy</strong></td>
<td>Researcher demonstrated empathy consistently through the sessions by:</td>
</tr>
<tr>
<td></td>
<td>• Acknowledging/ responding to verbal and non-verbal communication</td>
</tr>
<tr>
<td></td>
<td>• Listening to and validating thoughts and feelings where appropriate</td>
</tr>
<tr>
<td><strong>Child-centred</strong></td>
<td>Researcher consistently took a child-centred approach throughout the sessions:</td>
</tr>
<tr>
<td></td>
<td>• Appropriate communication with each child, taking account of developmental level/ ability/ ASD/ preferred methods of communication for example sitting on the floor with Arthur/ lowering verbal load with Connor when necessary</td>
</tr>
<tr>
<td></td>
<td>• Consistently showing interest and understanding of the child’s perspective</td>
</tr>
<tr>
<td></td>
<td>• The Homunculi enabled flexible and adaptable verbal and non-verbal ways of encouraging the child to be active in the session</td>
</tr>
<tr>
<td></td>
<td>• Researcher was responsive to the needs of the child in the sessions, for example, negotiating times for activities with Arthur and sticking to them exactly</td>
</tr>
</tbody>
</table>
### Creativity
- The Homunculi enables a wide range of therapeutic methods to be used: talking, drawing, role play, development of characters and so on
- The Homunculi enables engaging methods to be used, tailored around the child’s skills and interests, e.g. use of detectives with Arthur
- The Homunculi provides an accessible, child-friendly and ASD-friendly was for the child to access and understand the CBT model

### Collaborative practice

#### Joint session planning
- To some extent, child and therapist (researcher) agreed which topics would be covered. Child guided by researcher who was guided by staff/parents regarding areas of difficulty
- The child was able, at times, to negotiate how certain activities were approached, although this remained within the constraints of the Homunculi intervention

#### Being goal focused
- Goals of the intervention were discussed in a child-friendly way at the beginning of the intervention and recapped at the beginning of each session

#### Providing a rationale
- Activities were clearly linked to individual child’s goals

#### Summarising
- Used effectively through each activity to ensure that the researcher had heard the
child correctly, and to reinforce key points. Language used was appropriate for the individual child

**Seeking feedback**
- Use of the session rating scale after every session, completed by child, informed the next session

**Monitoring and valuating progress**
- See data gathering and data analysis section of this thesis

**Structuring the therapeutic process**

<table>
<thead>
<tr>
<th>Preparing for the session</th>
</tr>
</thead>
</table>
| Each session thoroughly prepared and any materials also prepared beforehand. Arthur in particular required a very stringent outline of what to expect for each session to support him to feel safe and enable him to access the learning opportunities  
- Appropriate equipment ready and set up for the session, including materials  
- The Homunculi structure guided activities and allowed for some flexibility as and when necessary |

<table>
<thead>
<tr>
<th>Pacing and time management</th>
</tr>
</thead>
</table>
| Sessions carried out at a pace appropriate for each child. Arthur required short, sharp activities whereas Bobby benefitted from additional opportunities to explore/discuss ideas  
- Time at the end of the session was kept for review and reflection, SRS provided a basis for discussion |

<table>
<thead>
<tr>
<th>Between-session tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some tasks were provided as between session tasks, based upon session content and goals</td>
</tr>
<tr>
<td><strong>CBT tasks aimed at facilitating understanding</strong></td>
</tr>
<tr>
<td>------------------------------------------------</td>
</tr>
<tr>
<td><strong>Psycho-education about CBT</strong></td>
</tr>
<tr>
<td>• CBT model, visual form explained and discussed. Variety of methods used—handouts, picture prompts, ‘thoughts and feelings screen’</td>
</tr>
<tr>
<td>• Application of the CBT model to child’s experiences/ particular situations to aid child’s understanding</td>
</tr>
<tr>
<td>• Fight or flight response useful particularly in relation to informing child about remaining in control of emotions</td>
</tr>
<tr>
<td><strong>Recognising emotions</strong></td>
</tr>
<tr>
<td>• Certain activities specifically to support child to recognise and distinguish between different emotions</td>
</tr>
<tr>
<td>• Feelings fan to support emotional recognition work</td>
</tr>
<tr>
<td>• Specific discussion regarding particular experiences of the child, e.g. specific time the child felt happy/sad/cross/nervous and so on, supported by drawing/ visuals</td>
</tr>
<tr>
<td>• Emotions rated through the Homunculi thoughts and feelings screen and the development of a ‘story’</td>
</tr>
<tr>
<td><strong>Discovering cognitions</strong></td>
</tr>
<tr>
<td>• Child helped to gain access to their thoughts, assumptions, beliefs through The Homunculi Approach</td>
</tr>
<tr>
<td>• Work to support child’s ability to identify if a thought was ‘helpful’ or not in managing emotions, e.g. explicitly labelling thoughts as helpful or unhelpful on cartoons and story development work</td>
</tr>
</tbody>
</table>
- Homunculi story development helped the child to consider alternative ways of looking at their experience
- The Homunculi provided a context within which children could examine their beliefs, assumptions and habitual patterns of thinking, for example, thought bubbles drawn onto a picture, exploring automatic thoughts through developing a narrative from the story stem of the Homunculi, discovering patterns of thinking, e.g. Bobby- ‘perfectionism’, Connor- ‘catastrophising’, Arthur- ‘seeing the negatives’

<table>
<thead>
<tr>
<th>Developing a shared formulation</th>
<th></th>
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</thead>
</table>
| - Child supported to understand about different aspects of their life and to think about this in a coherent way  
- Simple formulations built with child  
- Therapist (researcher) effort to understand child made explicit e.g. ‘That seems really important, should we put it into our storyboard?’ or ‘That is very interesting, can you help me to understand it a bit more?’ |

**CBT skills aimed at facilitating coping, acceptance and change**

<table>
<thead>
<tr>
<th>Developing coping strategies and acceptance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Teaching new strategies to manage emotions through the Homunculi gadget, e.g. Arthur- ‘distractor gadget’ (to make him laugh) or Connor- ‘balloon gadget’ to encourage deep breathing</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Problem solving</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Therapist (researcher) and child worked through problems together through the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>story development aspect of The Homunculi Approach, including considering alternative solutions</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>• Ways of managing emotions discussed, for example, different gadgets designed for managing different emotions or situations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Encouraging positive behaviour</th>
<th>• Targeted praise/ encouragement to reinforce desired behaviour e.g. noticing steps of progress</th>
</tr>
</thead>
</table>

| Specific behavioural change techniques | • Aimed to increase positive behaviours and decrease negative behaviours |
|-----------------------------------------|• ‘New’ behaviours/ ways of tackling difficult situations practised in sessions e.g. scripts developed during role play |

<table>
<thead>
<tr>
<th>Cognitive change methods</th>
<th>• Encouraging adaptive self-talk in difficult situations- practised using the Homunculi story development</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Support to recognise negative thoughts, evaluate how helpful/ accurate thoughts are, consideration of replacing unhelpful thoughts with more helpful thoughts- done explicitly through the story development aspect of the Homunculi</td>
</tr>
<tr>
<td></td>
<td>• Socratic questioning (provided by The Homunculi Approach) useful to explore ideas/beliefs help by children</td>
</tr>
</tbody>
</table>
3.11 Research Phases

The phases of the research are outlined in figure 4.

- **Pilot and development phase**
  - Piloting of Homunculi materials, some session content and emotional literacy checklist through timely casework
  - Pilot study with Zoe:
    - Pupil, teacher and parent complete checklist (parent checklist not returned to school therefore missing data)
  - 5 CBT based approach sessions
  - Pupil, teacher and parent complete checklist (parent checklist not returned to school therefore missing data)

- **Data collection phase 1**
  - Emotional literacy checklists completed by pupils, teachers and parents for Bobby, Arthur and Connor

- **Intervention phase and data collection phase 2**
  - 5 individualised, personalised CBT based approach sessions, carried out by the researcher with Bobby, Arthur and Connor. Researcher journal kept throughout, detailing observations and interactions

- **Data collection phase 3**
  - Emotional literacy checklists completed by pupils, teachers and parents for Bobby, Arthur and Connor

- **Data collection phase 4**
  - Emotional literacy checklists completed by pupils, teachers and parents for Bobby, Arthur and Connor
  - Semi-structured interviews with pupil and teacher

*Figure 4: Phases of research*
3.12 Data Analysis Methods

3.12.1 Statistical analysis.

Statistical analysis was used to analyse the quantitative information gained from the checklists. Due to the small sample, it was not possible to use inferential statistics on the quantitative data. Therefore, descriptive statistics were used to describe the main features of the quantitative information and to summarise the sample. Descriptive statistics make no inferences or predictions based on the gathered data (Cohen, Manion & Morrison, 2007). According to Graziano and Raulin (2007), descriptive statistics serve two purposes. Firstly, they describe the data with one or two numbers, making it easier to compare groups and secondly, they can provide a basis for later analyses using inferential statistics. In this research, the descriptive statistics were used to solely describe the data as no later analyses were carried out due to the small sample size.

3.12.2 Thematic analysis of the semi-structured interviews.

Thematic analysis is viewed as a foundational method for qualitative analysis. As stated by Clarke and Braun (2013), there are a number of different versions of the process of thematic analysis that have been proposed, for example, Aronson (1994), Attridge-Stirling (2001) and Braun and Clarke (2006). The thematic analysis process employed for this piece of research is that of Braun and Clarke (2006) which is a highly systematic introduction to thematic analysis which imposes high standards upon the analyst (Howitt & Cramer, 2008). Therefore, the use of this particular process of thematic analysis was deemed appropriate for use in this study.

According to Braun and Clarke (2006), thematic analysis is a useful method for identifying, analysing and reporting patterns or themes within qualitative data. Thematic analysis enables a data set to be organised and described in rich detail, with the researcher playing an active role in the process of identifying and analysing themes to link to the research questions.
The term ‘theme’ in relation to thematic analysis represents something important about the data that is captured in relation to the research questions. In thematic analysis, researcher judgement is necessary to determine what a theme is in relation to what it captures and how relevant it is to the research questions: there are no explicit rules to govern what exactly a ‘theme’ is (Braun & Clarke, 2006).

According to Braun and Clarke (2006), themes can be identified in different ways. Inductive themes are data driven: themes identified are strongly linked to the data rather than being driven by theoretical interest. Theoretical themes are driven by the researcher’s theoretical or analytic interests and tend to provide a detailed analysis of some aspect of the data. Semantic themes, according to Braun and Clarke (2006), are themes that are identified explicitly within the data, whereas latent themes identify underlying ideas, assumptions or conceptualisations, and involve interpretive work on the part of the researcher.

As this piece of research is within a critical realist epistemological stance and due to the exploratory nature of this research, inductive thematic analysis was used— that is, data was coded without trying to fit it into a pre-existing coding frame, and themes identified were primarily semantic themes. A decision was made to thematically analyse the pupil and the teacher interviews together. This was to enhance the strength of the themes derived from the interviews.

**3.12.2.1 Six phases of thematic analysis.**

Braun and Clarke (2006) identified a six phase model of thematic analysis, where a more recursive analysis style is required. This enables movement back and forth through the phases as and when required for the purposes of refinement and clarification. The six phases informed by Braun and Clarke (2006) are described in table 10 below and the application of this model to the current research study is made explicit. See appendix 6 for an example of an audit trail through the process of thematic analysis.
### Table 10: Thematic analysis

<table>
<thead>
<tr>
<th>Phase</th>
<th>Description</th>
<th>Application to this case study</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phase 1: familiarising yourself with the data</strong></td>
<td>The researcher is required to become immersed in the data by listening to audio recordings, transcribing it, reading and re-reading the transcriptions, whilst making any initial analytic observations.</td>
<td>Listened to audio-recordings. Transcribed the semi-structured interviews verbatim. Read and re-read the transcriptions whilst making notes regarding initial ideas.</td>
</tr>
<tr>
<td><strong>Phase 2: Generating initial codes</strong></td>
<td>Production of initial codes from the data.</td>
<td>The entire data set was worked through systematically and codes were identified. Each data set was coded manually because the researcher was familiar and comfortable with using this method, and the amount of data being</td>
</tr>
</tbody>
</table>
Potential patterns were highlighted and post-it notes used to identify segments of the data that appeared important.

The extracts of the data that were considered significant were coded.

<table>
<thead>
<tr>
<th>Phase 3: Searching for themes</th>
<th>Sorting all relevant coded data into potential themes</th>
<th>Themes were constructed by the researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Refocused the researcher at a broader level</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Produced a visual representation of the data in the form of a thematic map using post-it notes</td>
</tr>
<tr>
<td>Phase 4: Reviewing themes</td>
<td>Reviewing and refinement of themes</td>
<td>Ensuring that the themes are appropriate in relation to the level of the coded data extracts and in relation to the level of the entire data set</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>At times it was necessary to merge two themes together or to split a theme into two separate themes to ensure that they were accurate.</td>
</tr>
<tr>
<td>Phase 5: Defining and naming themes</td>
<td>Ongoing analysis to refine the specifics of each theme to identify the ‘essence’ of each theme</td>
<td>A clear definition or name was generated for each theme</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ensured that the name of the theme accurately reflects the essence of the theme to avoid presenting misleading information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Themes were checked by another Doctoral researcher to ensure inter-rater reliability and</td>
</tr>
</tbody>
</table>
### 3.12.3 Cross-case analysis.

Each individual case study integrating quantitative and qualitative data was considered and then a cross-case analysis was carried out to observe the pattern of the results across the cases. This is supportive in enabling the main findings of each individual case study to be applied to the research questions.

### 3.13 Critique of Methodology

This section provides a critical discussion regarding some of the strengths and weaknesses of the design of this study.

#### 3.13.1 Case study methodology.

A case study design was chosen for this research due to the exploratory nature of the research and the epistemological position of critical realism. Awareness of prior research in the broader field of using CBT with children with ASD, and a lack of specific research investigating in-school CBT with children with ASD to aid emotional regulation skills had also helped to guide the design. A typical limitation of a case study design is the lack of generalisability of the findings to the wider population (Yin, 2014). As stated by Yin (2014), case studies are ‘generalisable to theoretical propositions and not to populations or universes’ (pp. 21). It is acknowledged that the findings of this research will not be generalised to the wider
population of all children with autism. However, this research does provide an insight regarding whether or not CBT based approaches could have an impact upon the emotional regulation of the primary aged children with autism within the sample, whether any gains will be maintained at a two month follow up, as well as gaining information relating to the adaptations necessary to enable primary aged children with ASD to successfully access CBT based approaches. In depth information gained from this multiple-case study design may be able to guide future research and enable the gathering of data upon a larger scale, if necessary and appropriate.

Although the sample size for this research is relatively small (three case studies), the time restraints on this research prevent it from being any larger. As stated by Yin (2014), a common limitation of the case study design is that it often becomes unmanageable. By limiting the sample size to three (and not including the pilot study in the analysis), this will prevent the data from becoming unmanageable as well as allowing a deeper exploration of each child's experiences of the CBT based approach designed to improve emotional regulation.

A further limitation often discussed in relation to case study methodology is the supposed lack of rigour associated with this approach (Yin, 2014). Every effort has been made in this research study to systematically analyse all of the data and report findings accordingly whilst acknowledging the critical realist epistemological stance.

Whilst a range of the case study methodology limitations have been acknowledged, there are also some positives that come from using a case study. The use of case studies enables in depth investigations into phenomena and can offer important insights into research areas. If carefully managed, they can offer valuable insights into various research areas.
3.13.2 Validity and reliability.

3.13.2.1 Construct validity.

Construct validity is defined by Yin (2014) as ‘the accuracy with which a case study’s measures reflect the concepts being studied’ (p. 238). In order to enhance construct validity, the researcher ensured that multiple sources of evidence were used (see section 3.7) and data triangulation was used. According to Yin (2014), case studies using multiple sources of evidence are rated more highly in terms of overall quality. Furthermore, the researcher ensured that quantitative measures were chosen that directly measure and triangulate children’s emotional regulation, to enable multiple perspectives to be gathered. Faupel’s (2003) Emotional Literacy Checklist was the only measure suitable for the age group of the participants in the study that the researcher was aware of that offered a direct measure of emotional regulation.

A further way in which construct validity was enhanced in this study was through establishing a chain of evidence. The literature review (see chapter 2) led to the development of research questions (see section 2.14) with propositions based upon the literature. This led to a clearly defined and explained methodology (see chapter 3) and then findings are clearly documented in chapter 5. Chapter 6 continues the chain of evidence through a discussion of the findings in relation to the research questions.

A significant contribution to construct validity was made through the researcher consulting with and working closely with her supervisor throughout the entire process.

3.13.2.2 Internal validity.

According to Yin (2014), internal validity is ‘the strength of a cause-effect link made by a case study, in part determined by showing the absence of spurious relationships and the rejection of rival hypotheses’ (p. 239). This research attempted to improve the internal validity through pattern matching. The Homunculi Approach (Mackay and Greig, 2013) is designed to improve the social and emotional skills of
children with ASD and as there was not a clear improvement in emotional regulation across all three cases, it could be that the measures used were not comprehensively measuring emotional regulation. Internal validity was further enhanced through addressing rival explanations, which are discussed in the findings and discussion sections (see chapters four and five).

3.13.2.3 External validity.

According to Yin (2014), external validity refers to ‘the extent to which findings from a case study can be analytically generalised to other situations that were not part of the original study’ (p. 238). It is acknowledged by the researcher that it is not possible to generalise the findings of this research to the wider population due to the small sample size and the exploratory nature of this research. To enhance the external validity of this study, replication logic was applied in the form of literal replication (see section 3.6.1.4). This predicted that there would be similar results across the cases although individual differences between the participants and contexts mean that contrasting findings may be likely. This enables the findings of this research to inform future research with a similar group of children.

3.13.2.4 Reliability.

Reliability is defined by Yin (2014) as ‘the consistency and repeatability of research procedures used in a case study’ (p. 240). The researcher aimed to enhance the reliability of this study through the use of a case study protocol (see section 3.6.1.1) which contains information to be followed whilst carrying out the research, supporting the researcher to remain on track throughout the research and to some extent supporting the replicability of this study.

3.13.3 ‘Insider’ research.

The term ‘insider research’ refers to times when a researcher carries out a study directly concerned with the setting in which they work (Robson, 2011). According to Mercer (2007), both inside and outside statuses have advantages and disadvantages. In this piece of research, the researcher was the school EP for the
primary school attended by two of the pupils in the study. However, the researcher had only just gained that particular school into her patch when the data gathering commenced and had never met either of the children or staff members before. In order to ensure that this had minimal effect upon the research, it was made clear to the participants that the role of researcher was separate to that as a TEP and the researcher ensured that the nature and aims of the study were fully understood. The fact that the researcher was a TEP in one school and not the other meant that informal day to day conversations regarding the research were more forthcoming in School 1 than in School 2, due to the amount of time spent in School 1 compared to School 2. On the other hand, visits to School 2 were solely associated with the research and therefore this may have led to more salient information being shared. Although this is acknowledged by the researcher, it is considered that this will have had minimal effect upon the findings of the study.

The fact that the researcher conducted the sessions as well as gathered the data meant that she had an intimate knowledge of the study. It is argued by some, including Robson (2011) that this may lead to a lack of objectivity. However, complete objectivity may be very difficult to attain in any experimental methodology and so every effort was made in this piece of research to gather data from a variety of sources and seek to triangulate data, to ensure that the true meanings of the data are heard.

3.13.4 Social desirability bias.

The researcher both conducted the CBT based approach sessions with the children and gathered the data which is the focus of the study. This may have had an effect upon the data gathering because staff in particular may be keen to be positive about an intervention. It was made clear by the researcher that their true opinions about any effects of the intervention would be valuable and it was very important for participants to be honest when reporting their views as the researcher is interested in finding effective ways to support children with ASD to manage their emotions effectively, and therefore honest responses would be required in order to develop interventions appropriately in the future.
3.13.5 Missing data.

Some problems were encountered that were unforeseen: some parent checklists were not completed and returned to school for the researcher. Despite numerous efforts of both the researcher and the school to retrieve the checklists, it was not possible within the project timescales. Therefore, missing data is a limitation of this study.

3.13.6 Semi-structured interviews.

The use of semi-structured interviews in this research enabled targeted, focussed data to be collected which provided explanations as well as personal views. However it could be argued that participants may have poor recall which could lead to inaccuracies in the data, particularly the children who have a lesser ability to reflect as adults. The issue of reflexivity was considered in depth. In order to encourage the interviewees to give honest accounts of their experience and not respond to social desirability bias, the researcher was clear about her axiological position: that it was important to find suitable and appropriate ways to support children with ASD and so honest accounts would be necessary. The semi-structured interviews for teachers were difficult to arrange logistically due to the demands upon teachers. Therefore, interviews had to be short to enable teachers to participate. Ideally, more time would have been given to ensure that a more complete and thorough exploration of the interviewee’s perceptions and experiences was enabled, although in the time allowed, rich information was gathered.

Semi-structured interviews were carried out with pupils and teachers, but not the parents of the participants. This was for two reasons: firstly, the research was mainly concerned about the skills of the child within the school setting; and secondly, in order to keep the case study a manageable size to complete within the project time frames. This is a potential area for further research: to investigate parent perceptions of whether CBT based approaches can support emotional regulation skills in children with ASD.
3.13.7 Thematic analysis.

Thematic analysis is a flexible tool to analyse qualitative data and it was chosen to be used in this piece of research for the benefits it offers for data analysis, enabling themes to be developed which were compared across cases and then used to inform understanding of how useful CBT based approaches can be in supporting emotional regulation skills in children with ASD. However, thematic analysis has received some criticism for relying upon subjective opinion. This was addressed through asking a colleague of the researcher’s to check the themes for construct validity and reliability. A further limitation is that the use of thematic analysis within this project was time consuming, although limiting the number of cases supported the researcher to manage this.

3.13.8 Participant criteria.

An element of the criteria for participation may be a limitation of this research. In order to determine whether children would be able to cope with the language demands of the CBT approach, teachers were asked to provide their perceptions, based upon their experience of the child in the classroom. This could have been tighter and the use of a psychometric assessment (Wechsler Intelligence Scale for Children, 4th edition- WISC-IV) could have provided more accurate information upon the verbal abilities of the participants. However, this was not used due to the ethical issues of such an approach, for example, if completion of the WISC-IV had highlighted any difficulties that the participants and the parents of the participants had not expected.

3.13.9 Implementation.

The challenges of ‘applying’ intervention programmes have led to a discrete field of knowledge production which is known as ‘implementation science’. Two areas of implementation are of interest to the current study. ‘Implementation fidelity’ refers to how far programs are implemented as intended by programme developers, and according to Durlak and DuPre (2008), positive outcomes have been achieved from
interventions with as low as 60% fidelity. ‘Implementation adaptation’ refers to the changes made to the original programme whilst it is being implemented. According to Dulak and DuPre (2008), implementation adaptation is inevitable for school-based programmes, and fidelity and adaptation frequently co-occur, with each being important to outcomes.

The Homunculi intervention is a structured intervention but flexible enough to allow adaptations to be made. In the current study, the structured intervention provided in the manual was adhered to, and enhanced by additional activities to ensure that emotional regulation was specifically addressed, as well as to enable the intervention to be personalised for each pupil.

3.14 Ethical Considerations

Throughout the course of designing, conducting, analysing and evaluating this research, a number of ethical frameworks were adhered to. The Code of Ethics and Conduct (British Psychological Society (BPS), 2009) and the Health and Care Professionals Council (HCPC) Standards of Conduct, Performance and Ethics (HCPC, 2008) were consistently adhered to and furthermore, this research was considered in line with the School of Education’s Ethical Practice Policy and Guidance (University of Manchester School of Education, 2011-2012). A number of considerations were considered crucial in ensuring that this research was completely ethical. These are discussed below.

3.14.1 Approval.

Ethical approval was gained on 18th October 2013 from the School of Environment, Education and Development Research Integrity Committee and is contained in appendix 7.

3.14.2 Informed consent.

Participants and the parents of the children involved in the study were informed of the nature and aims of the study and of their right to withdraw from the study at
any point. Participant information sheets (see appendix 8) ensured that parents were fully informed about research project, and if parents wanted their child to participate, they returned a consent form to school, to ensure that informed written consent was gained. There was a named person in school with whom parents could liaise if necessary and parents were given the contact details of researcher in case any further clarification was necessary. Permission was gained from headteachers to conduct the research in schools.

3.14.3 Pupil assent.

As well as gaining written informed parental consent, it was important to gain pupil assent. In line with the views of Cohen and Emanuel (1998), who stated that if children and young people are going to be involved in research it is expected that they are given an understandable explanation of what will happen and a clear choice of whether they would like to be involved or not, participants were informed of the nature and aims of the study and asked if they would like to take part. A pupil assent form, containing written information supported by visuals, was shared with participants to reiterate the spoken message (see appendix 9). As highlighted by Cohen et al. (2007), the principle of informed consent arises from subject’s right to freedom and self-determination, and therefore the participant should have the right to refuse to take part. At the beginning of each session, the researcher checked that the child was happy to engage with the session.

3.14.4 Anonymity and confidentiality.

Ensuring anonymity and confidentiality for participants of research studies is regarded as good practice and expected within legal frameworks. According to Robson (2011), confidentiality extends beyond not naming participants to not revealing personal details that might reveal a participant’s identity. In line with this, it was ensured that the specific findings for each child would be communicated with school and home. Pseudonyms were used to represent each child during write-up to ensure anonymity. Interview data and transcriptions were treated as confidential material and anonymised upon transcription.
3.14.5 Pupil wellbeing.

Pupil wellbeing was of paramount importance throughout this research study and it was important to ensure that the children’s needs were kept at the centre of the process. CBT based approach sessions were carried out by the researcher personally and a supportive and positive stance was maintained throughout. Semi-structured interviews (see appendix 10 for interview schedules) were conducted by the researcher personally and the children completed the emotional literacy checklists with the researcher present to ensure pupil wellbeing was maintained. The Youth Session Ratings Scale (SRS) was completed by the pupils at the end of each CBT based approach session to gain the child’s view of the sessions.

3.14.6 Debriefing.

The findings of this research were disseminated, once the research was completed, through letters posted to the schools for the attention of both the teachers involved and the parents of participants. Children received a personalised ‘Homunculi pack’ containing the information from their sessions as well as receiving a child-friendly letter to inform them of the findings and to thank them for participating.
Chapter 4: Findings

4.1 Chapter Outline

This chapter addresses and evaluates each of the three cases separately. A case vignette introduces each case, which provides details regarding each child’s situation and emotional regulation skills prior to the intervention, and describes the reasons for including the pupil in the intervention. Descriptive statistics of the Emotional Literacy Checklists (Faupel, 2003) are presented, and thematic analysis findings for the semi-structured interviews is discussed in relation to research question one and research question two which were as follows:

1. What is the level of self-reported, school staff reported and parents reported emotional regulation in a sample of children with ASD before and after individualised, in school CBT based approach sessions?
2. To what extent are any gains from individual, in school CBT based approach sessions maintained at follow up?

Analysis of the researcher diary will be discussed in relation to research question 3:

3. What sorts of adaptations are necessary to enable primary-aged children with ASD to successfully access CBT based approaches?

At the end of this chapter, all three cases are discussed and evaluated using a cross-case analysis which produces overall themes and conclusions in relation to the three research questions.

4.2 Case 1: Arthur

4.2.1 Case vignette.

Arthur is a 9 year old boy who lives at home with his mother and his older sister. He has not had contact with his father for a number of years. He is currently a year 5 pupil in a mainstream primary school and was described by his class teacher as a ‘bright boy’. Arthur received a diagnosis of ASD from a psychiatrist in 2008, when he was three years old. Arthur often talks at length about his own interests and has
some difficulty understanding jokes and sarcasm. He finds it challenging to understand and express his feelings and emotions appropriately, as well as difficulty understanding the emotions of others, and often has difficulty coping in new or different situations. He benefits from being prepared for change thoroughly. Arthur is rather dependent upon rules and finds it difficult to accept if rules are ‘bent’ or broken. At the beginning of the intervention the Special Educational Needs Coordinator (SENCO) described Arthur’s emotional regulation skills as “very poor”, stating how he often had difficulty inhibiting his emotional responses to situations and how this would have a negative impact upon his behaviour. When Arthur became upset, he found it very difficult to return to a regulated state (being calm and in control of his emotions: within the classroom context this enables him to fully access learning and social opportunities) and he would often remain in a distressed state for up to 45 minutes at a time, over situations that teaching staff did not perceive to warrant such a response, such as not being able to be the banker in a game of monopoly. This was leading to a lot of lost learning time for Arthur and as well as emotional distress. Numerous strategies, including the introduction of a ‘feelings volcano’ emotional thermometer, the use of fiddle toys and the use of social stories, had been implemented in order to support Arthur’s emotional regulation skills but had had limited impact. School staff including the SENCO and Arthur’s teacher, as well as Arthur’s mother, were very keen for him to be involved in the research project. After completion of the Emotional Literacy Checklists, it was apparent that Arthur met criteria to be included in the research project.

In line with The Homunculi Approach, Arthur created certain ‘missions’ to work on throughout his sessions, relating to particular times or situations during which it was particularly for him to regulate his emotions effectively. Arthur chose two specific missions: ‘to keep calm at lunchtimes’ and ‘to keep calm if things seem unfair’. He designed five agents to support him on working through his missions, and each agent had a gadget. As suggested by the intervention manual, three of the agents were made up of a boss (designed to keep watch outside the skull, raise the alarm if problems are noticed, and make sure problems are happily resolved), and
manager (to motivate others and keep track of the apprentice) and an apprentice (who observes and learns lessons from the story). Further agents for Arthur included Agent M (who was responsible for making sure things stay calm at lunchtime) and Agent R (who was responsible for making sure that things stay calm if situations seem unfair). Arthur’s gadgets included the ‘think finder’ magnifying glass, designed to encourage him to remember to think; the ‘thought finder’ binoculars, designed to remind him to search for helpful thoughts, the ‘thinking whistle’ which encouraged Arthur to take deep breaths, and the ‘distractor’ red card, designed to help Arthur think of something relaxing if he was finding a situation difficult.

4.2.2 Quantitative analysis.

4.2.2.1 Teacher checklists.

Appendix 4 shows the score bands for the overall emotional literacy score and subscale scores for the teacher checklist. Although self-regulation and self-awareness scores are the most relevant for the purpose of this study (see Section 3.7.1.1), other scales are presented to enable the reader to understand the full context of any changes. The teacher checklist scores for Arthur at pre-intervention, post-intervention and at follow-up are displayed on table 11. In the tables, the self-regulation and self-awareness scores, which are the main focus of the study are presented in bold, with other scores, which are of more peripheral interest presented in italics.
### Table 11: Teacher checklist- pre-intervention, post-intervention and follow up overall and subscale scores for Arthur

<table>
<thead>
<tr>
<th></th>
<th>Pre-intervention</th>
<th></th>
<th>Post-intervention</th>
<th></th>
<th>Follow-up</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Score</td>
<td>Descriptor</td>
<td>Score</td>
<td>Descriptor</td>
<td>Score</td>
<td>Descriptor</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td>41</td>
<td>Well below average</td>
<td>52</td>
<td>Average</td>
<td>54</td>
<td>Average</td>
</tr>
<tr>
<td><strong>Self-awareness</strong></td>
<td>10</td>
<td>Below average</td>
<td>11</td>
<td>Average</td>
<td>11</td>
<td>Average</td>
</tr>
<tr>
<td><strong>Self-regulation</strong></td>
<td>4</td>
<td>Well below average</td>
<td>8</td>
<td>Below average</td>
<td>8</td>
<td>Below average</td>
</tr>
<tr>
<td><strong>Motivation</strong></td>
<td>9</td>
<td>Average</td>
<td>11</td>
<td>Average</td>
<td>12</td>
<td>Average</td>
</tr>
<tr>
<td><strong>Empathy</strong></td>
<td>9</td>
<td>Below average</td>
<td>10</td>
<td>Below average</td>
<td>11</td>
<td>Average</td>
</tr>
<tr>
<td><strong>Social skills</strong></td>
<td>9</td>
<td>Well below average</td>
<td>12</td>
<td>Average</td>
<td>12</td>
<td>Average</td>
</tr>
</tbody>
</table>

#### 4.2.2.2 Parent checklists.

Appendix 4 shows the score bands for the overall emotional literacy score and subscale scores for the parent checklist. The parent checklist scores for Arthur at pre-intervention, post-intervention and at follow-up are displayed on table 12.
Table 12: Parent checklist- pre-intervention, post-intervention and follow up overall and subscale scores for Arthur

<table>
<thead>
<tr>
<th></th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Score</td>
<td>Descriptor</td>
<td>Score</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td>48</td>
<td>Well below average</td>
<td>56</td>
</tr>
<tr>
<td><strong>Self-awareness</strong></td>
<td>10</td>
<td>Well below average</td>
<td>11</td>
</tr>
<tr>
<td><strong>Self-regulation</strong></td>
<td>7</td>
<td>Well below average</td>
<td>11</td>
</tr>
<tr>
<td><strong>Motivation</strong></td>
<td>9</td>
<td>Well below average</td>
<td>9</td>
</tr>
<tr>
<td><strong>Empathy</strong></td>
<td>10</td>
<td>Well below average</td>
<td>11</td>
</tr>
<tr>
<td><strong>Social skills</strong></td>
<td>12</td>
<td>Well below average</td>
<td>14</td>
</tr>
</tbody>
</table>

4.2.2.3 Pupil checklists.

Appendix 4 shows the score bands for the overall emotional literacy score for the pupil checklist. The pupil checklist scores for Arthur at pre-intervention, post-intervention and at follow-up are displayed on table 13. As discussed in section 3.7.1.1, whilst the overall emotional literacy scales were sufficiently reliable for
pupil checklists, individual subscales (including the self-awareness and self-regulation subscales) were not and therefore are not reported.

**Table 13: Pupil checklist- pre-intervention, post-intervention and follow up overall emotional literacy scores for Arthur**

<table>
<thead>
<tr>
<th></th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Score</td>
<td>Description</td>
<td>Score</td>
</tr>
<tr>
<td>Overall emotional literacy score</td>
<td>91</td>
<td>Well above average</td>
<td>92</td>
</tr>
</tbody>
</table>

**4.2.2.4 Summary of Emotional Literacy Checklist data for Arthur.**

The data collected from the teacher checklist indicates that Arthur’s self-awareness skills improved by one point from pre- to post-intervention, which had the effect of shifting his self-awareness score from within the ‘below average’ range into the ‘average’ range. This slight change was maintained at follow-up. Arthur’s score in relation to self-regulation improved by four points from pre-intervention to post-intervention, shifting from the ‘well below average’ range into the ‘below average’ range, and remained stable at follow-up. Although not a focus of this research it is also interesting to note that the perceived change in Arthur’s social skills, from 9 at pre-intervention to 12 at post-intervention and follow-up.

The data collected from the parent checklists also indicate some positive changes in Arthur’s self-regulation skills from pre- to post-intervention, which improved by four points and shifted from within the ‘well below average’ range into the ‘below average’ range. This change was maintained at follow up. Arthur’s self-awareness
score improved by one point from pre- to post-intervention, and this slight change was maintained at follow-up.

The data collected from the pupil checklists indicates that Arthur’s overall emotional literacy score remained within the ‘well above average’ range at all three time points over which checklists were completed. Although individual subscale scores are not specifically coded by Faupel et al. (2003), comparing the pupil questionnaire with the other checklists, the following items from the checklist appear to represent self-awareness:

- ‘I know what things I’m good and bad at’
- ‘I can describe how I am feeling most of the time’
- ‘I am easily hurt by what others say about me’
- ‘I am good at many things’
- ‘I worry a lot about the things I’m not good at’

While there are potential validity and reliability issues with examining the scores individually, if was felt that examination of these items might help to establish a picture of how Arthur felt that aspects of his self-awareness might be developing at different stages of the intervention. However, visual inspection of these data did not reveal any discernible differences between the scores that Arthur gave himself pre- to post-intervention or from post-intervention to follow up.

Comparison with the other checklists suggests that the following items from the pupil questionnaire represent self-regulation:

- ‘I often lose my temper’
- ‘I get upset if I do badly at something’
- ‘I calm down quickly after I have got upset’
- ‘I am usually a calm person’
- ‘I can wait for my turn’

Again, whilst the potential validity and reliability issues with examining the scores individually are acknowledged, there was no discernible difference in Arthur’s self-
ratings pre- to post-intervention or from post-intervention to follow up on any of the items. This suggests that Arthur’s perception of his self-awareness and self-regulation remained relatively stable over the course of the intervention.

### 4.2.3 Qualitative Analysis.

The transcriptions from the semi-structured interviews with Arthur and Ms Arms were analysed together using thematic analysis. The data were analysed using the process outlined by Braun and Clarke (2006) in section 3.12.2.1. The following diagram, figure 5, shows the final thematic map. The thematic analysis process produced three organising themes and 12 basic themes. The following sections present the themes and subthemes elicited. In order to make the themes and subthemes more accessible to the reader, themes will be presented in **bold** and subthemes in **bold italics**.
4.2.3.1 Theme 1: Managing emotional regulation.

Throughout the teacher and child interviews, changes in Arthur’s management of his own emotions were frequently discussed. This theme is made up of six significant and meaningful subthemes:
The theme and subthemes are displayed on the thematic map in figure 6. Each subtheme will be considered in turn.

**Figure 6: Thematic map, theme 1, Arthur**

4.2.3.1.1 Subtheme: Improved recognition/ understanding of emotions.

The thematic analysis suggests that ‘**improved recognition/ understanding of emotions**’ is a key subtheme within the overriding theme of ‘**managing emotional regulation**’, recognised by both Arthur and his teacher. Arthur stated that the intervention had been “…helping me to not get mad when I don’t need to. And stay in control so I don’t get mad” suggesting that an increased awareness and understanding that ‘getting mad’ is not always necessary. It also suggests that
Arthur may have developed a heightened awareness of recognising the early warning signs of him becoming angry or upset, thus enabling him to respond to his emotions more effectively at such times. This is supported by Arthur’s teacher who stated that “Well he hasn’t really had a meltdown, it hasn’t really got to that stage, he’s been able to catch it”. Arthur’s teacher appeared to suggest that Arthur is no longer reaching ‘crisis point’ due to an increased understanding of his emotions. This is illustrated by a quote from Arthur’s teacher, “He’s able to regulate better and identify, oh this is because of this reason, so I don’t need to go to this really emotional place where I’m completely in crisis”. Reference was also made by Arthur’s teacher to an improvement in Arthur’s ability to accurately identify his emotions and the effect that this had on his ability to manage his emotions appropriately. Specifically, Arthur’s teacher said:

“I think he’s beginning, he’s coming to know that actually these emotions that he’s portraying aren’t either, aren’t necessarily real or aren’t as strong as he perceives them to be, yeah, so erm, I think he’s becoming aware that he’s dealing with it better you know what I mean?”

While the quantitative data for Arthur were mixed, there are some indications therefore, both from Arthur and his teacher that there was some improved recognition of and understanding of his emotions during the course of the intervention, which appear to be supporting Arthur to regulate his emotions more successfully.

4.2.3.1.2 Subtheme: Emotional responses more balanced.

The subtheme of ‘emotional responses more balanced’ was brought into discussion by both Arthur and his teacher, and throughout both interviews it was suggested that Arthur’s emotional reactions to situations appear to be more appropriate post-CBT. It appeared that post-CBT, Arthur was generally calmer. Specifically, his teacher stated that “generally, he seems a lot calmer” while Arthur mentioned that “they’ve [The Homunculi] been really helping me when I’m, I am, try am calm”, suggesting that the Homunculi strategies discussed in the CBT sessions were
supportive for Arthur in the sense that they support him to remain in a calmer state.

It was also clear during both interviews that Arthur’s ability to control his emotions appeared to have improved. Arthur’s teacher emphasised this by saying “I certainly noticed more recently him still finding things that he would get upset about but being able to control himself a bit more” and “…so there’s been times when I’ve seen him like, puffing and panting a bit about something and I’ll have a little chat to him and he’ll deal with it ok”. Arthur emphasised that use of the Homunculi had been helpful in supporting him to control his emotions, for example, by saying “…helping me to not get mad when I don’t need to. And stay in control so I don’t get mad”.

Furthermore, Arthur’s teacher emphasised that Arthur’s emotional responses to situations appeared to have changed post-CBT. For example, the teacher described Arthur’s reaction to a recent situation that would have been like to have caused him high levels of externalised emotional distress pre-CBT, stating that “it wasn’t go into complete crisis, he was just very very clingy”. This suggests that perhaps Arthur’s ability to control his emotions has changed his emotional responses to situations. This is illustrated further by a quote from Arthur’s teacher, “…he used to have to go out [of the classroom] because it would be that noisy and stuff but now the most he will do is put his head in his hands and have a little moment to himself”. It could be the case that Arthur has utilised skills from the intervention regarding interpreting situations differently which may have supported him not to reach the level of emotional distress he was previously reaching, enabling him to remain more in control of his emotions. It could also be the case that Arthur may have internalised his response, which is not desirable and needs managing appropriately. It could suggest that other strategies, for example an emotional thermometer or appropriate emotional teacher support, would be necessary in addition to the intervention to support further management of Arthur’s emotional regulation.
4.2.3.1.3 Subtheme: Shorter incidents of emotional dysregulation.

It became evident, particularly through the teacher interview, that post-CBT Arthur seemed to be experiencing fewer of what his teacher described as ‘meltdowns’. If he was becoming upset post-CBT, he seemed able to return to a regulated state more quickly, and therefore, incidents were lasting for shorter amounts of time than pre-CBT. Arthur’s teacher stated that “there’s been a few times when he has got upset but it’s lasted sort of five minutes and then he’s come out of it pretty quickly” and “he goes back to perfectly happy very quickly now”, indicating a reduction in the length of time it takes for Arthur to return to a regulated state if he has become upset post-CBT. Furthermore, the number of ‘big incidents’ for Arthur post-CBT appeared to have diminished, as stated by his teacher, “there’s been very few big incidents for him”, emphasising that this is a positive change for Arthur. In addition to this, Arthur stated that “sometimes I’m not getting as mad”, indicating that he perceived incidents to be less intense following the intervention.

4.2.3.1.4 Subtheme: Improved ability to cope with previous trigger points.

‘Previous trigger points’ refers to particular times or situations that Arthur found difficult pre-CBT, which would often result in Arthur being unable to manage his emotions successfully. Arthur’s teacher acknowledged the positive impact that the CBT appeared to have on Arthur’s ability to remain in a regulated state at these times, stating that “lunchtimes are much better, I know he identified that was a difficult point for him when he was working with you which I’m so pleased about”. Furthermore, Arthur’s teacher emphasises that although Arthur was likely to find it more difficult to regulate his emotions in certain situations due to his ASD, he appeared to be able to deal with such situations differently post-CBT:

“He still gets a bit like stressed over things, and control, but I think he’ll always be like that because of the autism. Like with the kids, he gets upset if other kids won’t follow the rules or [aren’t] doing what they should be so erm I think that will always be something that will bother him because of
who he is, but his reaction to it and the way he is dealing with it has probably changed”.

Although Arthur may still find certain situations challenging, it appears that he is now able to cope with them more effectively. However, it is interesting to note that the perception of the teacher, that Arthur was always going to have emotional regulation difficulties as a result of his ASD. This introduces a potentially interesting debate about what is realistically achievable for children with ASD, which will be discussed further in section 5.7.3.3.

4.2.3.1.5 Subtheme: Continuing difficulties in emotional regulation.

One subtheme within the overarching theme of ‘managing emotional regulation’ was evident within Arthur’s interview that was less positive that the other subthemes elicited. Arthur perceived there to be no change in his ability to regulate his emotions, which was illustrated when he was asked the direct question, “Do you think your ability to control your emotions has changed since we did our work together on The Homunculi or is it still the same?” and answered “Still the same”. This view is supported by Arthur’s responses on the Emotional Literacy Checklist (Faupel et al. 2003). Additionally, Arthur implied that some things were still difficult for him. This was illustrated through Arthur stating “It’s a bit easy but a teeny bit hard [to calm down]”.

4.2.3.1.6 Subtheme: Changes maintained over time.

Changes in Arthur’s emotional regulation post-CBT were maintained over time, according to his teacher. Ms Arms stated that “he’s functioning really well now. He’s having a really good year so fingers crossed it carries on”. This suggested that Ms Arms may have had seen an improvement in Arthur’s emotional regulation. However, in considering rival explanations for improvements (see discussion section 5.5.1), Ms Arms’ quote makes reference to Arthur having a good year, implying that any changes may be longer-term than the CBT intervention. It may be therefore that the timing of the intervention was fortuitous in allowing Arthur to
build on progress he had made within Year 5 and that it built upon existing good practice which was allowing Arthur to make positive changes.

4.2.3.2 Theme 2: Effects of managing emotional regulation differently.

A predominant theme in both interviews was regarding the ‘effects of managing emotional regulation differently’. This theme encompassed two subthemes:

- Effects of managing emotional regulation differently for the teacher
- Effects of managing emotional regulation differently for the child

This is displayed in figure 7 below. Each subtheme will be discussed in turn.

Figure 7: Thematic map, theme 2, Arthur

4.2.3.2.1 Subtheme: Effects of managing emotional regulation differently for the child.

Throughout both interviews, the effect that Arthur’s management of emotional regulation had had upon him was a prominent subtheme. Numerous references to Arthur’s wellbeing were made. Arthur’s teacher emphasised that Arthur may be happier post-CBT, “he’s probably happier now because he’s not having these meltdowns” and suggested that the change in Arthur’s ability to regulate his emotions may have had a direct effect upon his happiness when she stated that:
“that’s had a wider impact in that way that not only just having the freedom of going to such an emotional place but that the knock on effect has stopped so I think that has meant he’s a bit happier”.

During Arthur’s interview, he stated that he feels a little happier post-CBT but implied that he was not yet as happy as he would like to be. Arthur stated “It makes me feel a bit happier but not that good though”, suggesting that although Arthur has recognised a slight change in his happiness post-CBT, he would still like to be happier still and that further intervention or follow up may be required in order to address this, along with Arthur’s expectations of what ‘feeling happier’ might entail.

Arthur’s teacher made reference to a change in his emotional wellbeing as a result of him being able to regulate his emotions more successfully. This is represented by the following statement, “…greater sense of wellbeing because if you’re upset, and you’re so upset for so long, that’s quite draining isn’t it. It’d be exhausting”.

Although it may be possible that the intervention has brought about these changes, in considering rival explanations for this change (see Discussion section 5.5.1), Ms Arms makes reference (during the interview) to Arthur having a good year (as mentioned in section 4.2.3.1.6). It may be therefore that other factors, for example, maturation, a positive relationship with the class teacher, or effective classroom practice, may also have impacted upon Arthur’s emotional wellbeing, and it could be that the timing of the intervention was beneficial in enabling Arthur to foster this sense of wellbeing. Arthur also stated that the use of a particular strategy (a magnifying glass gadget, designed to support Arthur to ‘find his thoughts’) “helped him feel better” suggesting that successful implementation of some of the strategies had been beneficial to the way Arthur feels. Arthur’s teacher made reference to Arthur’s awareness of his success in regulating his emotions more appropriately as impacting upon his sense of self: “I think he’s becoming aware that he’s dealing with it better” and “he does enjoy trying his best and being successful so it’s good”. Reference was also made to how others perceived Arthur post-CBT, suggesting that changes in Arthur’s ability to manage his emotions has impacted
positively on how he is perceived by his peers, “It will also have been good for how others perceive him”.

Furthermore, it was highlighted during the teacher interview that improvements in Arthur’s ability to manage his emotions had impacted upon his ability to access learning opportunities. Arthur’s teacher stated “I suppose him being calmer he can just access the classroom more and he’s more focused, more able to learn.” Additionally, Ms Arms stated that Arthur was benefitting from less ‘lost learning’ time now due to an improvement in his ability to regulate his emotions. This was illustrated by the following quote, “the most time that has been lost for him is maybe five or ten minutes where he’s decided he doesn’t want to do something and I’ve given him a bit of time and then gone back to it and then he’s been fine”. Arthur also highlighted that he was more able to re-enter activities after using the strategies from the CBT sessions, meaning that he is not missing out on activities with his peers as much, “When I’m finish... when I’m finished with it, when I’m calmed down, I always just go back, I always go back out”.

4.2.3.2.2 Subtheme: Effects of managing emotional regulation differently for the teacher.

The effects that Arthur’s changes in emotional regulation ability had had upon the teacher formed an important subtheme that was highlighted in the teacher interview. Ms Arms appeared to be relieved that Arthur was appearing to be less distressed in school:

“Because he used to just really cry and cry and cry and then he’d calm down a bit and if another adult would come along and say “Are you ok?” it would all start all over again and it was just nice to see that he hasn’t, hasn’t had that.”

Ms Arms stated that post-CBT she had been more able to support Arthur’s emotions independently without support from the SENCO. Ms Arms stated that “Since the CBT, erm really I haven’t had to speak to the SENCO at all about his
emotions and about him getting upset”. This suggests that Arthur’s emotional responses may have been less intense and easier for his teacher to deal with within the classroom context, potentially benefitting both Arthur and the teacher. During the teacher interview, Ms Arms reflected that Arthur’s parent shared her view regarding Arthur’s emotional regulation, “I had his parents’ evening on Friday and mum said she thought the same sort of thing”.

Overall, it seems that Arthur’s ability to regulate his emotions benefitted him in terms of reducing his externalising behaviours and allowing him to access learning opportunities more successfully, and benefitted his teacher in terms of being able to support Arthur more successfully without the support of the SENCO.

**4.2.3.3 Theme 3: Important aspects of the intervention.**

The theme ‘important aspects of the intervention’ was prevalent through both interviews. Four main subthemes were identified:

- Ownership
- Developmental level
- Strategies
- Therapeutic relationship

This is illustrated in figure 8 below, and each subtheme is then discussed in turn.
4.2.3.3.1 Subtheme: Ownership.

This subtheme was elicited from the teacher interview. Ms Arms highlighted two main factors related to ‘ownership’ that appeared to benefit Arthur. Firstly, the child-centred nature of the intervention was perceived to be beneficial in allowing Arthur to take some control, and this was highlighted by the statement “it seemed more child-led in a way, more him in the driving seat”. In addition to this, the teacher also suggested that the personalised element of the intervention was supportive for Arthur, “he likes to be quite controlling, I think it gives him security but I think the CBT let him be in control of what it is that he was addressing”. These quotes appear to indicate that the intervention enabled Arthur to take an element of ownership and control within the sessions and it is interesting to speculate to what extent individualising the intervention according to need and preference enabled this to happen for Arthur. It appears that the teacher perceives that this was beneficial for him.
4.2.3.3.2 Subtheme: Developmental level.

The subtheme of *developmental level* was highlighted during the teacher interview. It seems that Arthur’s teacher thought that the style of the intervention was suited to Arthur, particularly the use of characters to enable Arthur to gain a metacognitive view of his thoughts, feelings and behaviour and to enable him to take the perspectives of other people. This is highlighted in the following quote from the teacher, “…and I think that kind of helped him understand himself better, having the different characters as well, so I think that has helped”. Additionally, the teacher perceived the intervention to be at a suitable developmental level for Arthur which enabled him to develop an understanding of how his thoughts influenced his feelings and behaviour. This is summed up by the following quote from the teacher interview: “I think the Homunculi, I think that was really good because it’s kind of tapped into more of his child-like understanding of how his brain works, and he is quite curious sometimes, he always wants to know more”.

4.2.3.3.3 Subtheme: Strategies.

Throughout Arthur’s interview, there was evidence that the strategies taught during the CBT sessions had been beneficial for him in supporting him to regulate his emotions. The ‘gadgets’ were mentioned five times and it appeared that Arthur found some of the gadgets useful to enable him to think more clearly, “…helping me to find my thoughts in my head, helping me to find my thoughts” which had supported him to calm down more easily, “It’s easier now [to calm down]. My favourite gadget was the thought finder, the magnifying glass”. Additionally, Arthur made reference to using strategies discussed in the sessions to support him to stay in control of his emotions. This is illustrated in the following quote from his interview, “Yeah, [the gadgets] Helping me to, helping me to not get mad when I don’t need to. And stay in control so I don’t get mad.” In summary, there is some evidence from the qualitative data that the intervention appears that the strategies shared with Arthur during the sessions have supported him to think more clearly, remain in control of his emotions more appropriately and calm down more easily post-CBT and that the Homunculi were particularly appealing to Arthur.
4.2.3.3.4 Subtheme: Therapeutic relationship.

The subtheme of ‘therapeutic relationship’ became apparent during Arthur’s interview as a supportive factor of the intervention. For example, Arthur made reference to being reminded of the researcher when he uses his Homunculi strategies, stating that “the Homunculi has also, has always been reminding me of you, when I was working with you” and it also appears that the notion of ‘working together’ to support Arthur with his emotions has been beneficial for him. A quote from his interview illustrates this, “…we were working together making them and the gadgets for helping, helping me with my emotions and feelings”. This suggests that the therapeutic relationship, particularly feeling that Arthur had someone supporting him to develop new skills to support his emotional regulation, was a beneficial aspect of the intervention.

4.2.3.4 Summary of changes in emotional regulation (research questions 1 and 2).

Overall, it appears that small positive changes were noted by the quantitative parent and teacher data in relation to Arthur’s self-awareness and self-regulation skills and maintained a two month follow-up. These are supported by data from the semi-structured teacher interview which suggest that Arthur’s teacher recognised a number of improvements in Arthur’s emotional regulation skills, such as fewer incidents of dysregulation, more balanced emotional responses and improved recognition or understanding of emotions, and suggested that these improvements may have been beneficial for Arthur including in terms of his behaviour, his ability to access learning opportunities and his wellbeing. From Arthur’s perspective, while there is no real evidence of improved self-ratings on the Emotional Literacy Checklists, it is useful to note that during the interview he was able to recognise a number of positive changes and was positive about using The Homunculi Approach, whilst recognising that he still had areas for development in relation to his emotional regulation skills.
4.2.4 Adaptations made to the programme for Arthur (research question 3).

In answering research question 3, “What sorts of adaptations are necessary to enable primary-aged children with ASD to successfully access CBT based approaches?” it was necessary to consider all of the individual adaptations made to Arthur’s CBT intervention which made it different from the manualised intervention presented in section 3.10 (Methodology).

Table 14 (below) portrays the bespoke adaptations made to the programme to enable him to fully access the learning opportunities. The table was completed from data recorded in the researcher diary and session plans.

**Table 14: Bespoke adaptations to the programme for Arthur**

<table>
<thead>
<tr>
<th>Session number</th>
<th>Bespoke adaptations</th>
</tr>
</thead>
<tbody>
<tr>
<td>All sessions</td>
<td>Approximate timings of individual activities made explicit. Arthur benefitted from being able to see the clock and the timings to be adhered to. Session rules written down together and visually displayed</td>
</tr>
<tr>
<td>1</td>
<td>Short, active breaks between session activities with explicit timings and a countdown to re-focusing on the session activity</td>
</tr>
<tr>
<td>2</td>
<td>A selection of computer print outs of characters for agents / gadgets provided by the researcher for Arthur to choose from</td>
</tr>
</tbody>
</table>
### 4.2.4.1 Summary of research question 3.

A number of bespoke adaptations to the programme were necessary to support Arthur to access and fully understand the activities and concepts discussed. At the beginning of each session, as for all participants, Arthur benefitted from knowing the structure of the session and how long was going to be spent on each activity. Although this could be considered to be a natural adaptation for a child with ASD, a specific element of this for Arthur was that he benefitted from being allowed a certain amount of negotiation as to how many minutes were spent on each activity. It was important to Arthur that exact timings were adhered to and he benefitted from being able to see a clock during all session activities. Being involved in negotiation over timings appeared to support Arthur to remain settled throughout the sessions, as well as giving him an element of control over his own learning.

Re-writing the session rules at the beginning of each session with Arthur was an adaptation made for him. Although recapping and displaying session rules each session was an adaptation made for all three cases, actually re-writing them (either
the researcher or Arthur himself) was an individual adaptation which appeared to support Arthur to remain mindful of the session rules.

Another bespoke adaptation made for Arthur was that a variety of computer printouts were provided for him to choose from to use as his agents and gadgets. Arthur was a reluctant writer and didn’t particularly enjoy drawing, hence providing computer printouts enabled him to choose the characters/gadgets most suitable for him and access the learning opportunities more easily than he would have had he been required to draw them himself. A further personalisation was in relation to making a record of his sessions. As Arthur was a reluctant writer, he preferred to take it in turns with the researcher to scribe his ideas.

Further adaptations for Arthur related to the story development within The Homunculi Approach. Role play was particularly beneficial to support Arthur’s understanding of the work covered in the sessions and he began to take ownership of this element of the sessions, using props from around the room to support his understanding and at times directing the researcher to carry out certain roles.

4.2.5 Summary of Case 1.

Main findings from case one were as follows:

- Improvements in self-regulation and awareness were noted by the teacher and parent post intervention and at follow up.
- Teacher interview data suggested that Arthur had engaged with the programme and that there had been some observable differences in the way he managed difficult situations.
- Arthur did not report self-awareness and self-regulation gains on the Emotional Literacy Checklists, and whilst being positive about aspects of the intervention, including the Homunculi, felt that emotional regulation was still an area of difficulty for him.
- Adaptations were made which provided additional structure, within a negotiated framework and included elements of drama and role play.
4.3 Case 2: Bobby

4.3.1 Case vignette

Bobby is a 9 year old boy who lives at home with his mother. He has not had contact with his father for a number of years. He is currently a year 5 pupil in a mainstream primary school and was described by his class teacher as an ‘intelligent boy’. Bobby has a diagnosis of ASD, which was diagnosed by Community Paediatrics through a multi-agency ASD panel in 2012. He reportedly has relatively good language skills and benefits from thorough explanations of situations. He has some difficulty understanding the ‘give and take’ nature of conversations and benefits from explicit teaching of unwritten social rules. Bobby finds it challenging to express his feelings and emotions appropriately as well as difficulty understanding the feelings of others. Bobby seems to find it challenging predicting the consequences of his actions.

The Special Educational Needs Coordinator (SENCO) stated that Bobby’s emotional regulation skills were poor, stating how he often had difficulty inhibiting his emotional responses to situations and how this would have a negative impact upon his behaviour in school. At times of emotional dysregulation, Bobby would display challenging behaviours including pushing chairs over and it would take him some time to return to a regulated state. This was leading to some lost learning time for Bobby and as well as emotional distress. Numerous strategies had been implemented in order to support Bobby’s emotional regulation skills including one to one support during the mornings, and although some impact had been noticed, developing emotional regulation skills was still an area for development for Bobby. School staff including the SENCO, as well as Bobby’s mother were very keen for him to be involved in the research project. After completion of the Emotional Literacy Checklists, it was apparent that Bobby met criteria to be included in the research project.

In line with The Homunculi Approach, Bobby created certain ‘missions’ to work on throughout his sessions, relating to particular times or situations during which it
was particularly for him to regulate his emotions effectively. Bobby chose a general mission: ‘to keep and in control if things get tricky’. He designed five agents to support him on working through his missions, and each agent had a gadget. As suggested by the intervention manual, three of the agents were made up of a boss (designed to keep watch outside the skull, raise the alarm if problems are noticed, and make sure problems are happily resolved), and manager (to motivate others and keep track of the apprentice) and an apprentice (who observes and learns lessons from the story). Further agents for Bobby included ‘Eye Guy’ and ‘Pozzy Man’. Bobby’s gadgets included the ‘temper catcher’ designed to catch a temper before it got too big, the ‘grabber’ which grabs unhelpful thoughts and turns them positive, the ‘magic wand’ which emits a special relaxing mist to make anger disappear, the ‘balloon’ designed so that anger can be blown into the balloon and then let go of, and the ‘revolter bolter’, designed to get rid of unhelpful thoughts.

4.3.2 Quantitative Analysis.

4.3.2.1 Teacher checklists.

Appendix 4 shows the score bands for the overall emotional literacy score and subscale scores for the teacher checklist. The teacher checklist scores for Bobby at pre-intervention, post-intervention and at follow-up are displayed on table 15.
Table 15: Teacher checklist- pre-intervention, post-intervention and follow up overall and subscale scores for Bobby

<table>
<thead>
<tr>
<th></th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Score</td>
<td>Descriptor</td>
<td>Score</td>
</tr>
<tr>
<td>Overall</td>
<td>49</td>
<td>Below average</td>
<td>57</td>
</tr>
<tr>
<td>Self-awareness</td>
<td>11</td>
<td>Average</td>
<td>11</td>
</tr>
<tr>
<td>Self-regulation</td>
<td>7</td>
<td>Below average</td>
<td>10</td>
</tr>
<tr>
<td>Motivation</td>
<td>11</td>
<td>Average</td>
<td>12</td>
</tr>
<tr>
<td>Empathy</td>
<td>10</td>
<td>Below average</td>
<td>12</td>
</tr>
<tr>
<td>Social skills</td>
<td>12</td>
<td>Average</td>
<td>12</td>
</tr>
</tbody>
</table>

4.3.2.2 Parent checklists.

Appendix 4 shows the score bands for the overall emotional literacy score and subscale scores for the parent checklist. The parent checklist scores for Bobby at pre-intervention, post-intervention and at follow-up are displayed on table 16.
Table 16: Parent checklist- pre-intervention, post-intervention and follow up overall and subscale scores for Bobby

<table>
<thead>
<tr>
<th></th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Score</td>
<td>Descriptor</td>
<td>Score</td>
</tr>
<tr>
<td>Overall</td>
<td>45</td>
<td>Well below average</td>
<td>43</td>
</tr>
<tr>
<td>Self-awareness</td>
<td>9</td>
<td>Well below average</td>
<td>9</td>
</tr>
<tr>
<td>Self-regulation</td>
<td>7</td>
<td>Well below average</td>
<td>7</td>
</tr>
<tr>
<td>Motivation</td>
<td>8</td>
<td>Well below average</td>
<td>6</td>
</tr>
<tr>
<td>Empathy</td>
<td>10</td>
<td>Well below average</td>
<td>9</td>
</tr>
<tr>
<td>Social skills</td>
<td>11</td>
<td>Well below average</td>
<td>13</td>
</tr>
</tbody>
</table>

4.3.2.3 Pupil checklists.

Appendix 4 shows the score bands for the overall emotional literacy score for the pupil checklist. The pupil checklist scores for Bobby at pre-intervention, post-intervention and at follow-up are displayed below on table 17. As discussed in section 3.7.1.1, whilst the overall emotional literacy scales were sufficiently reliable
for pupil checklists, individual subscales (including the self-awareness and self-regulation subscales) were not and therefore are not reported.

**Table 17: Pupil checklist- pre-intervention, post-intervention and follow up overall emotional literacy scores for Bobby**

<table>
<thead>
<tr>
<th></th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Score</strong></td>
<td><strong>Description</strong></td>
<td><strong>Score</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>Overall emotional</td>
<td>59</td>
<td>Well below average</td>
<td>83</td>
</tr>
<tr>
<td>literacy score</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**4.3.2.4 Summary of Emotional Literacy Checklist data for Bobby.**

The data collected from the teacher checklist indicate that there was no change in Bobby’s self-awareness skills from pre- to post-intervention, and an improvement of one point from post-intervention to follow-up. Bobby’s score in relation to self-regulation improved by three points from pre-intervention to post-intervention, shifting from the ‘below average’ range into the ‘average’ range. This was not maintained at follow up and shifted back into the ‘below average’ range. Although not a focus of the research, it is also interesting to note that a similar pattern was found in relation to Bobby’s empathy skills, which shifted from ten at pre-intervention to 12 at post-intervention and back to 10 at follow-up.

The data collected from the parent checklists indicate no changes in Bobby’s self-regulation or self-awareness skills from pre- to post-intervention. An improvement was seen in Bobby’s self-awareness skills from post-intervention to follow-up, which increased by five points and although not a focus of the study, it was
interesting to note that additionally Bobby’s score in relation to empathy shifted from the ‘well below average’ range at pre- and post-intervention into the ‘average’ range at follow-up. Self-regulation increased by one point from post-intervention to follow-up.

The data collected from the pupil checklists indicate that Bobby’s overall emotional literacy score shifted from within the ‘well below average’ range at pre-intervention, to within the ‘above average’ range at post-intervention and then into the ‘well above average’ range at follow-up. Although individual subscale scores are not specifically coded (see section 4.2.2.4), it appears that the following items from the checklist seem to represent self-awareness:

- ‘I know what things I’m good and bad at’
- ‘I can describe how I am feeling most of the time’
- ‘I am easily hurt by what others say about me’
- ‘I am good at many things’
- ‘I worry a lot about the things I’m not good at’

Using the scores from the items assumed to represent self-awareness listed above, notable changes for Bobby included moving from ‘not like me at all’ at pre-intervention to ‘quite like me’ at post-intervention in relation to the statement ‘I know what things I’m good and bad at’. At pre-intervention, Bobby rated the statement ‘I can describe how I am feeling most of the time’ as ‘not like me at all’ and at post-intervention as ‘only a bit like me’, but at follow up this had improved to ‘very like me’.

The following items from the checklist are thought to represent self-regulation:

- ‘I often lose my temper’
- ‘I get upset if I do badly at something’
- ‘I calm down quickly after I have got upset’
- ‘I am usually a calm person’
- ‘I can wait for my turn’
Notable changes for Bobby in relation to the above statements include shifting from ‘not like me at all’ at pre- and post-intervention to ‘very like me’ at follow up in relation to the statement ‘I can wait for my turn’. In relation to the statement ‘I am usually a calm person’, at pre-intervention Bobby rated this as ‘not like me at all’ and at post-intervention he rated it as ‘very like me’. Similarly, in relation to the statement ‘I calm down quickly after I have got upset’ at pre-intervention Bobby rated this as ‘not like me at all’ and at post-intervention he rated it as ‘very like me’.

4.3.3 Qualitative analysis.

The transcriptions from the semi-structured interviews with Bobby and Ms Barnes (Bobby’s teacher) were analysed together using thematic analysis. The data were analysed using the process outlined by Braun and Clarke (2006) in section 3.12.2.1. The following diagram, figure 9, shows the final thematic map. The thematic analysis process produced four organising themes and 12 basic themes.
Managing emotional regulation

Improved awareness / recognition of emotions

Some difficult times remain

Clearer reasons for dysregulation

Ability to regulate emotions before reaching 'crisis point' has changed

Wellbeing

Behaviour

Enquiry

Important aspects of the intervention

Adult support

Strategies

Therapeutic relationship

Some support required for successful emotional regulation

Routine/ boundaries

Classroom strategies

Figure 9: Thematic map, Bobby
4.3.3.1 Theme 1: Managing emotional regulation.

‘Managing emotional regulation’ was a key theme elicited from both Bobby’s and Ms Barnes’ interviews. This theme is made up of four significant and meaningful subthemes:

- Improved awareness or recognition of negative emotions
- Clearer reasons for dysregulation
- Ability to regulate emotions before reaching ‘crisis point’ has changed
- Some difficult times remain

The theme and subthemes are displayed in figure 10 below. Each subtheme will be discussed in turn.

Figure 10: Thematic map, theme 1, Bobby
4.3.3.1 Subtheme: Improved awareness or recognition of negative emotions.

The thematic analysis suggests that ‘improved awareness or recognition of negative emotions’ is a key subtheme within the overriding theme of ‘managing emotional regulation’, highlighted by Bobby’s teacher. During the interview, Ms Barnes stated that Bobby appeared to be more aware of his tendency to get angry easily, and this was highlighted by Ms Barnes stating “I think he’s aware of the fact that he does get worked up”. In addition to this, Bobby’s teacher also suggested that Bobby is aware of feelings of injustice, and stated that “I think now he is aware sort of feelings of anger, if he feels injustice”. Ms Barnes highlighted that Bobby was now perhaps more aware of the early warning signs that he is becoming angry and this is illustrated by the following quote: “I think he is more aware of the fact that he does become angry”. This suggests that Bobby’s teacher perceived Bobby to be more aware of feelings of anger and injustice and more able to recognise the early warning signs of becoming angry following the intervention. Although Bobby did not make direct reference to acknowledging early warning signs of becoming angry, he made reference to “keep[ing] super bad temper man out”, suggesting that he may be aware that he may not be getting as angry.

4.3.3.2 Subtheme: Ability to regulate emotions before reaching ‘crisis point’ has changed.

The subtheme ‘ability to regulate emotions before reaching ‘crisis point’ has changed’ was a predominant theme throughout the interviews with both Bobby and his teacher. In this instance ‘crisis point’ refers to the point at which Bobby appeared to lose emotional control. This was also referred to by his teacher as a ‘meltdown’. An improvement in his ability to remain in control of his emotions was emphasised by Bobby. He stated that the intervention had supported his ability to “stay calm and in control” and also suggested that he found it easier to remain calm post-intervention, stating “…it’s easy to keep calm now”. Bobby seemed to attribute some of the changes in his ability to remain calm to the strategies from the intervention, and when discussing one of his gadgets, he reported that “I think that
one’s [the ‘temper catcher’] the most helpful because it helped get rid of him [Mr Temper Man]”. It seemed that Bobby was more aware of ways to prevent himself from getting angry and had been able to apply this knowledge which had helped him to recognise the positive effects that this has had for him, which is represented by the statement “I am able to keep in control. I haven’t been told off for ten weeks because of them [The Homunculi], they have helped me so much”. In addition to this, Bobby appeared to be aware of some behavioural strategies to support his ability to remain in control of his emotions, highlighted by the quote “It’s easy to keep calm now. I just play with someone else”. This suggests that Bobby was able to respond in more appropriate ways to situations that had the potential to be challenging for him.

Bobby’s teacher also recognised some changes in Bobby’s ability to regulate his emotions before reaching his ‘crisis point’. Ms Barnes highlighted an improvement in the amount of time that was required for Bobby to reach a calm state after becoming upset or distressed, stating that “he seems to calm down quick... more quickly”. Bobby’s teacher also appeared to recognise a difference in the way Bobby was supporting himself to reach a more regulated state, suggesting that he understood strategies that support him to do this successfully, “So yeah, I think now he is more aware of sort of like strategies for calming down”, and “he’s more likely to sort of try and remove himself from the situation”.

4.3.3.1.3 Subtheme: Clearer reasons for dysregulation.

‘Clearer reasons for dysregulation’ was an important subtheme highlighted within Bobby’s teacher’s interview. Ms Barnes emphasised that there appeared to be more obvious reasons for Bobby becoming upset post-CBT, an understanding of which was likely to enable staff members to support him effectively. This is summed up in the following quote:

“...now he doesn’t have a meltdown on a regular occasion really, it’s just if it’s something he’s stuck on, or if he’s not actually had his needs [met] so if
the designated TA is maybe not there and he’s struggling with something or somebody else has upset him”.

Additionally, Ms Barnes appeared to feel that Bobby’s ability to communicate how he felt was important in being able to understand the reasons for him becoming upset or distressed, and referred to this point with the comment, “if you just let him tell you his side of the story, you know, always try and listen to him, which we do, and he’s usually able to articulate how he feels”.

4.3.3.1.4 Subtheme: Some difficult times remain.

In relation to the overall theme of ‘managing emotional regulation’, the subtheme of ‘some difficult times remain’ was clear within both Bobby’s interview and Ms Barnes’ interview. It appears that there were particular times or situations that challenged Bobby’s ability to regulate his emotions effectively. When discussing how Bobby responded if another child ‘tells tales’ (a trigger point identified pre-CBT), Bobby stated that “it’s hard to keep calm. I can work on it still”. This suggests that although Bobby may find it challenging to remain calm in this type of situation, he is aware that this is a challenging situation for him and is also aware that he understands ways in which he can attempt to improve his response to such situations. It also suggests that more specific and structured work might be required in this area to compliment CBT. The more unstructured parts of the school day were highlighted by Ms Barnes as remaining as potentially challenging for Bobby post-CBT, particularly playtimes. Ms Barnes stated that “he seems to sniff out situations where there is potential for him to get into trouble, that’s more on the playground” and “if there’s something going on outside, he’ll be there”, suggesting that Bobby’s inquisitive nature may lead him into situations where he finds it difficult to regulate his emotions successfully, although this could also be in relation to his potential isolation at playtimes and his ability to develop and maintain appropriate friendships. It could be that Bobby’s self-awareness and ability to make good choices influences him to become involved in certain situations that lead to situations where he may find it more difficult to regulate his emotions. At times it appears that having an unsettled break time can impact upon the afternoon for
Bobby, “I just have to be aware of him in the afternoon which can be a wobbly time sometimes, if something has gone on at lunchtime”. This suggests that the CBT intervention may not necessarily address other areas of emotional functioning, although it is interesting to note that there were marginal gains in teacher and parent reported social skills, according to the Emotional Literacy Checklist responses.

4.3.3.2 Theme 2: Effects of managing emotional regulation.

‘Effects of managing emotional regulation’ was a predominant theme elicited from both Bobby’s and Bobby’s teacher’s interview. This theme is made up of two significant and meaningful subthemes:

- Wellbeing
- Behaviour

The theme and subthemes are displayed in figure 11 below. Each subtheme will be discussed in turn.

**Figure 11: Thematic map, theme 2, Bobby**

4.3.3.2.1 Subtheme: Wellbeing.

A crucial element of the overall theme ‘effects of managing emotional regulation’ was the emphasis placed upon Bobby’s wellbeing. This point was raised by both Bobby and his teacher, and was returned to regularly throughout Bobby’s interview. Both Bobby and Ms Barnes highlighted that Bobby appears to be happier post-CBT. Ms Barnes stated that “he’s a happy child now mostly. And I think that’s
the kind of overriding feelings that he has” and Bobby reported that the changes in his ability to manage his emotions since the intervention has helped him to feel happier, saying that “it makes me extra extra extra extra happy”. Bobby also made reference to the supportive effect that the intervention has had upon his view of himself, stating that “I guess it’s keeping me from going [getting] low self-esteem”, and explaining that changing the way he thinks about situations helped him to feel better about himself. This is encapsulated in the following quote: “so the Homunculi tell me nice thoughts and achievements I have made to make me feel good”. Bobby appeared to believe that the strategies discussed during the intervention had supported him to feel like he was more in control of his situation which had been beneficial to him. He stated that “mostly everything is better”, “it’s made my life much easier” and “I’ve been more in control of my life”. This offers tentative evidence that the intervention has had a positive effect upon Bobby’s wellbeing, noticed by both Bobby and his teacher.

4.3.3.2.2 Subtheme: Behaviour.

This subtheme depicts that the intervention has supported Bobby to manage his behaviour more successfully. This was recognised within both interviews (Bobby’s and Ms Barnes’) and suggests that a positive effect upon Bobby’s behaviour had been noted. There was evidence that Bobby’s behaviour was more settled post-CBT. Bobby recognised this and stated that “[my behaviour is] even more calm”, and this point was also raised by Ms Barnes who reported that “he is more settled”. It appears that Bobby’s teacher perceives a general improvement in his behaviour, and quoted “we haven’t seen any negativity recently”. Ms Barnes pointed out that post-CBT, there had been a reduction in the number of ‘meltdowns’ Bobby was experiencing and stated that “now he doesn’t have a meltdown on a regular occasion really”. Additionally, Bobby recognised that his ability to regulate his emotions had impacted upon his behaviour which had then, in turn, impacted upon responses he was receiving from staff members. Bobby stated that “I haven’t been told off for ten weeks, because of them [The Homunculi]”. This suggests that perhaps strategies from the intervention that were supportive in enabling Bobby to
remain more in control of his emotions were having a positive impact upon his behaviour in school, which had been noticed by both Bobby and his teacher.

4.3.3.3 Theme: Some support required for successful emotional regulation.

‘Some support required for successful emotional regulation’ was a key theme elicited from both Bobby’s and Bobby’s teacher’s interview. This theme encapsulates three significant and meaningful subthemes which need to be considered:

- Adult support
- Classroom strategies
- Routine and boundaries

The theme and subthemes are illustrated in figure 12 below. Each subtheme will be considered in turn.

Figure 12: Thematic map, theme 3, Bobby
4.3.3.1 Subtheme: Adult support.

The findings of the thematic analysis suggest that ‘adult support’ remained a key element in supporting Bobby’s emotional regulation post-CBT. The importance of adult support at times was emphasised by Bobby, who mentioned how he is able to regulate his emotions successfully during some challenging situations by requesting support from a member of staff, “I find it easy to keep calm now even if my work is really tricky because I know I can always put my hand up and the teachers will help me”. Reference was made by Ms Barnes to the importance of the supportive nature of staff members, “everybody is actually very sensitive to his needs” and the value of staff members in aiding Bobby to regulate his emotions effectively, “he’s usually better, if he is angry, then we take him outside with the TA that is designated to him” and “the TA in there took him out and talked to him so he is able to come down”. This suggests that if Bobby was finding it challenging to regulate his emotions appropriately in a particular situation, a member of staff who knows him well and is sensitive to his needs was able to provide Bobby with the necessary support to regain control of his emotional reactions. Although at times Bobby required adult support to remain in control of his emotions or to regain control, Bobby’s teacher, to a certain extent, appeared to normalise this somewhat, comparing some of Bobby’s experience to ‘normal child life’. This was encapsulated by the statement, “it could go pear shaped in a situation like that when he’s not with me or he’s not with his TA but then that is normal child life out on the playground”, and to some extent it seems that allowing Bobby the opportunity to experience situations that are challenging for him, as all children do, is likely to give him the opportunities to continue to learn and develop the skills he will need in later life.

Bobby’s teacher acknowledged the importance of the adults around Bobby having a full understanding of his needs as well as an appreciation of him as an individual child in order to support him effectively. Ms Barnes stated that “whoever he is with, understanding the nature of his difficulties and how to deal with them” is important, as well as stating “you know he is his own unique individual character and I think
everybody appreciates that”, highlighting the point that people working with Bobby need an understanding of him as a unique individual in order to support him effectively.

4.3.3.3.2 Subtheme: Classroom strategies.

The provision of effective classroom strategies was highlighted by Ms Barnes as a key factor that supported Bobby’s emotional regulation skills post-CBT. Ms Barnes highlighted that “I use a lot of strategies in class so if we’re sitting on the carpet he sits next to me” and it seemed that such strategies were beneficial in ensuring that situations did not arise that may cause Bobby to have difficulty regulating his emotions. Other classroom strategies were also mentioned by Ms Barnes, including the use of a visual timetable, “we have a structure and he has a visual timetable” and it appeared that Bobby’s teacher viewed such strategies as beneficial to aid Bobby’s emotional regulation skills. Although these strategies were not a feature of the intervention, it is useful to note them when considering the effectiveness of the intervention in its wider context.

4.3.3.3.3 Subtheme: Routine/ boundaries.

Throughout the teacher interview, Ms Barnes made reference to the subtheme of ‘routine / boundaries’ and the positive impact that they had upon supporting Bobby’s ability to regulate his emotions effectively. Ms Barnes emphasised that it was beneficial for Bobby to be aware of boundaries and expectations, and this is represented in the following quote, “he now knows that therefore there’s certain things that he’s not able to do, that I won’t accept him to do, in that respect he’s no different from anyone else”. It appeared that Ms Barnes believed that routine supports Bobby emotionally, and if his routine is changed then it may have a negative impact upon him. Ms Barnes stated “therefore I think sometimes he needs sort of regular routine and there was somebody different in the maths class yesterday so that threw him a little bit”, emphasising the point that regular routine is important for Bobby.
4.3.3.4 Theme: Important aspects of the intervention.

‘Important aspects of the intervention’ was a key theme elicited from Bobby’s interview. This theme encapsulates three significant and meaningful subthemes which need to be considered:

- Enjoyment
- Strategies
- Therapeutic relationship

The theme and subthemes are illustrated in figure 13. Each subtheme will be considered in turn.

Figure 13: Thematic map, theme 4, Bobby

4.3.3.4.1 Subtheme: Enjoyment.

Throughout Bobby’s interview, the subtheme of ‘enjoyment’ was referred to numerous times. It appeared that Bobby particularly enjoyed the intervention and stated that “I didn’t want it to finish!” even though the length of the intervention was clear from the outset and the ending of the intervention was adequately
prepared for. Throughout the sessions, it was clear that Bobby enjoyed many different aspects and in his interview he shared that he “liked creating them [the characters, and the comic].” It seems that the child-friendly nature of the intervention and the use of Bobby’s creative skills enabled him to gain a sense of enjoyment from the intervention.

4.3.3.4.2 Subtheme: Strategies.

It was particularly evident throughout Bobby’s interview that the strategies discussed and practised during the intervention appeared to have been useful to him. He appeared to find the more metacognitive aspects of the intervention useful; for example, he found the concept of developing ‘missions’ (outlining the areas in which the child would like to improve) beneficial, and in response to the question “What part was the most helpful to you?” Bobby replied “Prob, prob, probably… the missions”, suggesting that a greater awareness of the particular areas in which it was difficult for Bobby to regulate his emotions successfully was beneficial to him. The use of different characters with certain ‘traits’ also appeared beneficial, and Bobby stated that “if I’m getting negative, he [one of his agents, ‘Pozzy Man’] turns me positive”, suggesting again that the metacognitive aspect of The Homunculi Approach was helpful.

Another strategy that was highlighted as useful by Bobby was that of positive thinking. This was emphasised when Bobby was discussing how the intervention had supported his view of himself which had enabled him to regulate his emotions more readily. Bobby stated “so the Homunculi tell me nice thoughts and achievements I have made to make me feel good” suggesting that learning about thinking positively had been a beneficial aspect of the intervention. In addition to this, materials provided in the sessions were deemed useful by Bobby. He reported using a particular worksheet after the intervention had finished and finding it helpful, “the feelings detective, I still use that”. Furthermore, it appears that the CBT sessions have supported Bobby in terms of behaviour change, in relation to reducing ‘temper outbursts’ and enabling him to consider alternative way to respond to situations that were previously challenging for him. When discussing
how he was coping with a previous trigger point of becoming upset if a child did not want to play with him, Bobby highlighted that “it’s easy to keep calm now, I just play with someone else” which suggested that he is developing his ability to respond differently to situations that previously had the potential to be difficult for him to cope with.

4.3.3.4.3 Subtheme: Therapeutic relationship.

During his interview, Bobby made reference to the importance of the **therapeutic relationship**. When asked which part of the intervention was most useful, Bobby stated “talking to them [Homunculi], talking to you”. He was able to expand upon what it was that the researcher had done that had been helpful for him. In response to the question “What was it that I did that helped? Can you remember?” Bobby replied “That, like, how are you getting on, how are you feeling?” It appears that Bobby valued having a person to talk to about how he was feeling who was interested and ‘on his side’, and he stated that “you’ve [the researcher] helped me loads”.

4.3.3.5 Summary of changes in emotional regulation (research questions 1 and 2).

Overall, it appears that small positive changes were noted by the teacher completed quantitative data in relation to Bobby’s self-regulation skills from pre-post intervention, although this was not maintained at follow up. Parent-completed qualitative data showed no change in either self-awareness or self-regulation from pre- to post-intervention, although a positive change in self-awareness at follow-up, and an increase of one point at follow-up for self-regulation. Analysis of the qualitative data suggests some changes had been noticed that were not recognised by the quantitative data, including an improved awareness of negative emotions, and an improved ability to regulate emotions before reaching crisis point, which have had a positive impact upon Bobby’s wellbeing and behaviour. Some areas for development remain in relation to Bobby’s emotional regulation.
skills and some support is still required for him to regulate his emotions successfully.

4.3.4 Adaptations made to the programme for Bobby (research question 3).

In answering research question 3, “What sorts of adaptations are necessary to enable primary-aged children with ASD to successfully access CBT based approaches?” it was necessary to consider all of the individual adaptations made to Bobby’s CBT intervention which made it different from the manualised intervention presented in section 3.10 (Methodology).

Table 18 portrays the bespoke adaptations made to the programme to enable him to fully access the learning opportunities. The table was completed from data recorded in the researcher diary and session plans.
### Table 18: Bespoke adaptations made to the programme for Bobby

<table>
<thead>
<tr>
<th>Session number</th>
<th>Bespoke adaptations</th>
</tr>
</thead>
</table>
| 1              | Use of choices when identifying similar feelings words  
                 | Liked to ‘act out’ his experience of different feelings, e.g. a ‘happy dance’ – role play used to explore emotions |
| 2              | Collage materials and coloured felt tip pens used by T when designing agents/gadgets- supported him to think about characteristics of each and design them accordingly |
| 3              | Use of brightly coloured felt tips when recording story development |
| 4, 5           | No adaptations necessary |

#### 4.3.4.1 Summary of research question 3.

Some bespoke adaptations were made to the programme to support Bobby to successfully access the learning opportunities and to support him to fully develop his understanding of the concepts discussed. When discussing feelings, Bobby
‘acted out’ his experience of different feelings, for example, performed a ‘happy
dance’ for ‘happy’. This use of role play support Bobby to explore different
emotions and, in a way, to make them personalised to him. This supported his
ability to understand feelings words more easily. A further bespoke adaptation for
Bobby related to feelings work was in relation to supporting his ability to generate
similar feelings words for similar feelings. At first he found this difficult and
providing Bobby with a choice of words enabled him to select the most appropriate,
extending his knowledge.

A further bespoke adaptation for Bobby related to designing his agents and
gadgets. Using collage materials and brightly coloured felt tip pens enabled Bobby
to consider the particular characteristics of each. For example, one of the agents
who was ‘monitoring situations’ was designed to have big googly eyes, to remind
Bobby of the particular role of this particular agent. This supported Bobby to think
in more depth about the important characteristics of each agent and gadget.

4.3.5 Summary of Case 2.

Main findings from case two were as follows:

- No changes in self-awareness or self-regulation were noted by the parent
  emotional literacy checklists at post-intervention. A small improvement in
  self-regulation and a slightly bigger improvement in self-awareness (from
  well below average to within the average range) were noted at follow up
- No discernible differences in self-awareness noted by the teacher, and a
  slight improvement in self-regulation at post-intervention was not
  maintained at follow up
- Teacher interview data suggested that whilst some observable differences
  were noted regarding Bobby’s management of difficult situations and
  apparent monitoring of emotions, he still required support to monitor his
  emotions effectively
- Bobby reported self-awareness and self-regulation gains on the Emotional
  Literacy checklists. He highlighted that aspects of the intervention had
supported him although acknowledged that emotional regulation remains a difficulty for him at times

- Adaptations were made to the intervention that provided opportunities for further creativity.

4.4 Case 3: Connor

4.4.1 Case vignette.

Connor is an eight year old boy who lives at home with his mother, father and younger brother. He is currently a year 4 pupil in a mainstream primary school. Connor received a diagnosis of ASD from a Community Paediatrician in 2013. In relation to his language skills, Connor is inclined to talk at length about his own interests, namely computer games, and has some difficulty understanding the give and take nature of conversations. Connor finds it particularly difficult to understand his emotions and express his emotions appropriately, and understanding the emotions of others is also challenging for him. Connor also finds transitions difficult, particularly in new or unfamiliar situations, but also struggles with day-to-day transitions.

The Special Educational Needs Coordinator (SENCO) stated that Connor often finds it challenging to regulate his emotions, and can become very upset and display distressed behaviours at these times. At times of emotional dysregulation, it can take up to 45 minutes for Connor to return to a regulated state, leading to Connor missing out on learning time as well as emotional distress. School staff including the SENCO, as well as Connor’s parents were keen for him to be involved in the research project. After completion of the Emotional Literacy Checklists, it was apparent that Connor met criteria to be included in the research project.

In line with The Homunculi Approach, Connor created certain ‘missions’ to work on throughout his sessions, relating to particular times or situations during which it was particularly for him to regulate his emotions effectively. Connor chose two specific missions: ‘to keep calm when being dropped off at school’ and ‘to keep
calm at playtimes’. He designed five agents to support him on working through his missions, and each agent had a gadget. As suggested by the intervention manual, three of the agents were made up of a boss (designed to keep watch outside the skull, raise the alarm if problems are noticed, and make sure problems are happily resolved), and manager (to motivate others and keep track of the apprentice) and an apprentice (who observes and learns lessons from the story). Further agents for Connor included ‘Lucky’ and ‘Ethan’. Connor’s gadgets included the ‘gadget flinger’ to select the correct gadget for any situation, the ‘balloon’ to encourage deep breathing to enable thinking time, the ‘iron bar creator’ which were designed to prevent any negative thinking spiralling out of control, and the ‘iron bar reverser’.

4.4.2 Quantitative analysis.

4.4.2.1 Teacher checklists.

Appendix 4 shows the score bands for the overall emotional literacy score and subscale scores for the teacher checklist. The teacher checklist scores for Connor at pre-intervention, post-intervention and at follow-up are displayed on table 19.
Table 19: Teacher checklist- pre-intervention, post-intervention and follow up overall and subscale scores for Connor

<table>
<thead>
<tr>
<th></th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Score</td>
<td>Descriptor</td>
<td>Score</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td>49</td>
<td>Below average</td>
<td>50</td>
</tr>
<tr>
<td><strong>Self-awareness</strong></td>
<td>10</td>
<td>Below average</td>
<td>8</td>
</tr>
<tr>
<td><strong>Self-regulation</strong></td>
<td>6</td>
<td>Well below average</td>
<td>9</td>
</tr>
<tr>
<td><strong>Motivation</strong></td>
<td>9</td>
<td>Average</td>
<td>9</td>
</tr>
<tr>
<td><strong>Empathy</strong></td>
<td>11</td>
<td>Average</td>
<td>13</td>
</tr>
<tr>
<td><strong>Social skills</strong></td>
<td>13</td>
<td>Average</td>
<td>11</td>
</tr>
</tbody>
</table>

4.4.2.2 Parent checklists.

Appendix 4 shows the score bands for the overall emotional literacy score and subscale scores for the parent checklist. The parent checklist scores for Connor at pre-intervention, post-intervention and at follow-up are displayed on table 20.
### Table 20: Parent checklist - pre-intervention, post-intervention and follow up overall and subscale scores for Connor

<table>
<thead>
<tr>
<th></th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Score</td>
<td>Descriptor</td>
<td>Score</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td>57</td>
<td>Well below average</td>
<td></td>
</tr>
<tr>
<td><strong>Self-awareness</strong></td>
<td>9</td>
<td>Well below average</td>
<td></td>
</tr>
<tr>
<td><strong>Self-regulation</strong></td>
<td>11</td>
<td>Below average</td>
<td></td>
</tr>
<tr>
<td><strong>Motivation</strong></td>
<td>13</td>
<td>Average</td>
<td></td>
</tr>
<tr>
<td><strong>Empathy</strong></td>
<td>11</td>
<td>Well below average</td>
<td></td>
</tr>
<tr>
<td><strong>Social skills</strong></td>
<td>13</td>
<td>Well below average</td>
<td></td>
</tr>
</tbody>
</table>

Checklist not returned to school - missing data

#### 4.4.2.3 Pupil checklists.

Appendix 4 shows the score bands for the overall emotional literacy score for the pupil checklist. The pupil checklist scores for Connor at pre-intervention, post-intervention and at follow-up are displayed on table 21. As discussed in section 3.7.1.1 (Methodology), whilst the overall emotional literacy scales were sufficiently
reliable for pupil checklists, individual subscales (including the self-awareness and self-regulation subscales) were not and therefore are not reported.

**Table 21: Pupil checklist- pre-intervention, post-intervention and follow up overall emotional literacy scores for Connor**

<table>
<thead>
<tr>
<th></th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Score</td>
<td>Description</td>
<td>Score</td>
</tr>
<tr>
<td>Overall emotional literacy score</td>
<td>71</td>
<td>Average</td>
<td>63</td>
</tr>
</tbody>
</table>

**4.4.2.4 Summary of Emotional Literacy Checklist data for Connor.**

The data collected from the teacher checklist indicates a decrease of two points in self-awareness from pre-post intervention, which remained at follow-up. Connor’s self-regulation score improved by three points from pre- to post-intervention, shifting from within the ‘well below average’ range into the ‘average’ range. It is interesting to note that further positive changes were noted at follow-up, where Connor’s self-regulation score had increased by a further three points.

The parent post-intervention checklist for Connor was not returned to school and as a result parent perceptions at post-intervention is missing data. The data collected from the pre-intervention and follow-up checklists indicate no change in Connor’s self-awareness skills from pre-intervention to follow-up, and a decrease of four points in Connor’s self-regulation skills from pre-intervention to follow-up. It is also interesting to note that motivation and empathy scores all decreased from pre-intervention to follow-up.
The data collected from the pupil checklists indicates that Connor’s overall emotional literacy score remained shifted from within the ‘average’ range at pre-intervention to within the ‘below average’ range at post-intervention, and then back into the ‘average’ range at follow-up. Although individual subscale scores are not specifically coded, it appears that the following items from the checklist seem to represent self-awareness:

- ‘I know what things I’m good and bad at’
- ‘I can describe how I am feeling most of the time’
- ‘I am easily hurt by what others say about me’
- ‘I am good at many things’
- ‘I worry a lot about the things I’m not good at’

Using the scores from the items assumed to represent self-awareness listed above, it appears that there were not real discernible differences from pre- to post-intervention or from post-intervention to follow up.

The following items from the checklist are thought to represent self-regulation:

- ‘I often lose my temper’
- ‘I get upset if I do badly at something’
- ‘I calm down quickly after I have got upset’
- ‘I am usually a calm person’
- ‘I can wait for my turn’

Using the scores from the items listed above that are assumed to represent self-regulation, it appears that some aspects of Connor’s self-reported self-regulation scores decreased slightly from pre- to post-intervention and shifted back up at follow-up.

4.4.3 Qualitative analysis.

The transcriptions from the semi-structured interviews with Connor and Ms Cotton were analysed together using thematic analysis. The data were analysed using the
process outlined by Braun and Clarke (2006) in section 3.12.2.1. The following diagram, figure 14, shows the final thematic map. The thematic analysis process produced three organising themes and ten basic themes.
Managing emotional regulation

Recognising, identifying and communicating emotions

No generalised improvement

Changes in emotional regulation related to previous trigger points

Effects of change in managing emotional regulation related to previous trigger points

Wellbeing

Ownership

Strategies/materials

Distraction

Changing perceptions

Notable aspects of the intervention

Effects of change in managing emotional regulation related to previous trigger points

Behaviour

Learning

Figure 14: Thematic map, Connor
4.4.3.1 Theme 1: Managing emotional regulation.

Throughout the teacher and child interviews, changes in Connor’s management of his own emotions were frequently mentioned. This theme is made up of three significant and meaningful subthemes:

- Recognising, identifying and communicating emotions
- Changes in emotional regulation related to previous trigger points
- No generalised improvement in emotional regulation

The theme and subthemes are displayed on the thematic map in figure 15. Each subtheme will be considered in turn.

Figure 15: Thematic map, theme 1, Connor
4.4.3.1.1 Subtheme: Recognising, identifying and communicating emotions.

This subtheme was derived mainly through the teacher interview, where reference was made to Connor’s improving ability to begin to identify how he feels and share this with others. Ms Cotton explained how Connor had recently identified how he was feeling and shared this with a member of staff after an incident on the playground, and this was recognised by Connor’s teacher as an achievement for him. A worksheet from the CBT sessions supported Connor’s ability to do this. This point is encapsulated in the following quote from Connor’s teacher:

“…he had been a little unsettled and he went to his tray and took her [teaching assistant] a sheet which he used to help him to discuss, to discuss something that had happened on the playground with another child, I can’t remember the exact details. And she said that that was the first time he had actually been able to talk to her about how he was feeling and to actually, to identify, identify how he was feeling, himself. So that was an achievement for [child’s name].”

It appeared that Ms Cotton recognised the positive impact that this has had for Connor, highlighting “maybe that’s why he’s able to come into school much better now than he was before”. Ms Cotton also highlighted the positive effects of Connor being able to recognise, identify and share how he was feeling with members of staff, in enabling staff members to support him effectively. Ms Cotton stated, “I mean if he can find the words to tell somebody how he feels, it’s easier to help him, and reassure him”, which clearly highlights the benefits of a slight improvement in Connor’s ability to recognise and verbally communicate how he feels. In addition to this, Ms Cotton discussed that post-CBT, if Connor became upset or distressed (particularly on arrival at school), it was easier for staff members to identify why. Ms Cotton stated that “now if he does get upset, we can understand why... there’s a more obvious reason for it, whereas before we couldn’t work it out”.

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4.4.3.1.1 Subtheme: Changes in emotional regulation related to previous trigger points.

Throughout both the child and the teacher interview, references were made to Connor’s ‘changes in emotional regulation related to previous trigger points’. Connor recognised and acknowledged that his ability to remain in an emotionally regulated state at a previously identified trigger point of ‘people trying to wind him up’ had improved. He highlighted that “it’s not even a problem anymore” indicating that he was able to deal with this sort of situation much more easily post-CBT than he had been able to previously. Connor also acknowledged that he was more able to cope on arrival at school, another previous trigger point which had been particularly difficult for him pre-CBT. When asked “What’s it like now when mum and dad drop you off at school?” Connor responded “Erm it’s easier to do it now… it just feels easier”. This suggests that Connor was aware of improvements in his emotional regulation skills during certain situations that had been difficult for him pre-CBT.

Connor’s teacher also recognised some improvements in Connor’s emotional regulation skills in relation to certain situations that had been challenging for him pre-CBT, particularly regarding his ability to remain calm when arriving at school. Ms Cotton highlighted that “we’ve had very few incidences in the morning of him being unsettled recently which is wonderful”, suggesting that she acknowledged the positive effect that this had had. Connor’s teacher had also recognised an improvement in Connor’s ability to go on the playground with his peers, and stated “it was like he was overwhelmed maybe and it would take him a while to go onto the playground. That’s not happening as much either now. So that’s improved”.

4.4.3.1.2 Subtheme: No generalised improvement.

A significant theme that was derived from both the teacher and the child interview is that of ‘no generalised improvement’ in Connor’s emotional regulation skills. Although both Connor and Ms Cotton recognised that Connor’s emotional regulation skills had improved in relation to certain previously identified trigger
points, it appeared that positive changes were not generalised to other situations. When asked about whether he felt that his participation in the intervention had been helpful, he stated “I think it might have stayed the same”, although Connor was later able to talk about things that had been helpful for him and positive impacts that he recognised in relation to certain situations. Similarly, when asked if she had noticed any other changes in addition to Connor’s ability to regulate his emotions more easily during certain situations, Ms Cotton replied “not really”, indicating that positive changes noticed were perhaps more specific to certain times or situations and were not considered to be a general change.

4.4.3.2 Theme 2: Effects of change in managing emotional regulation related to previous trigger points.

Throughout the teacher and child interviews, ‘effects of change in managing emotional regulation related to previous trigger points’ was frequently discussed. This theme is made up of three significant and meaningful subthemes:

- Wellbeing
- Behaviour
- Learning

The theme and subthemes are displayed on the thematic map in figure 16. Each subtheme will be considered in turn.
4.4.3.2.1 Subtheme: Wellbeing.

The subject of Connor’s **wellbeing** was mentioned in both Connor’s interview and the teacher interview with Ms Cotton and it appeared that both Connor and his teacher felt that the CBT had had a positive impact upon Connor. Ms Cotton acknowledged that Connor appeared to be a lot more relaxed post-CBT, particularly in the mornings, and stated that he seemed “*a lot more relaxed, especially compared to what he used to be like in the morning, it would sometimes take up to 45 minutes, for him to calm down because he would get so, so worked up and upset*”. Connor himself noted that after the intervention “*it feels nice to be in school*”, although it is unclear the extent to which this was due to the intervention as Connor went on to expand how it also felt nice to be in school at times during the previous school year.

4.4.3.2.2 Subtheme: Behaviour.

Both Connor and his teacher made reference to the impact that the intervention had had on Connor’s **behaviour**. Connor’s teacher made reference to Connor seeming calmer, particularly in the mornings, and stated that “*he just seems much, *
much calmer”. She recognised and highlighted the impact that this had had for Connor, enabling him to settle into the school day more easily and more quickly than pre-CBT, saying “Yes, much calmer. He’s normally in class and settled straight away with the other children now”. Connor himself also appeared to recognise that he feels calmer in school, and when discussing factors that had helped him to regulate his emotions more easily in relation to previously identified trigger points, Connor reported that “I don’t know, keeping calm” had supported him to do this. Connor also acknowledged that some aspects of his behaviour, particularly in reaction to challenging situations had improved. He stated that “when people wind me up, I just try to ignore them”. Connor’s recognition that he was able to attempt to ignore somebody is a post-CBT improvement: pre-CBT, Connor found this difficult to do and had previously reported that he would get angry if someone tried to annoy him.

Although Ms Cotton acknowledged that Connor’s behaviour in certain situations had improved, it appeared that she had not recognised a general change in his behaviour. When asked to consider if any other areas of Connor’s behaviour had changed, Ms Cotton replied “No, not really”.

4.4.3.2.3 Subtheme: Learning.

The subtheme of ‘learning’ within the overarching theme of the effects of a change in Connor’s management of his emotional regulation was elicited from the teacher interview. Ms Cotton made reference to Connor’s improved ability to join in with the morning activities and also acknowledged his sense of enjoyment increasing as a result of this. Ms Cotton highlighted “so now he’s a lot calmer it means that he is able to join in more easily with the morning activities and enjoy them more” which suggested that Connor’s improved ability to regulate his emotions appropriately on arrival at school had impacted positively upon his ability to engage with morning activities as well as enjoy them. Furthermore, Ms Cotton spoke about the impact that Connor being settled and in the classroom with the other children had had upon his ability to access learning opportunities. This is evidenced by a quote from
Ms Cotton’s interview, “he is in the classroom and in the right frame of mind now for learning”.

4.4.3.3 Theme 3: Notable aspects of the intervention.

The theme ‘notable aspects of the intervention’ was prevalent throughout Connor’s interviews, and mentioned in the teacher interview. Four main subthemes were identified:

- Strategies/ materials
- Changing perceptions
- Ownership
- Distraction

This is illustrated in figure 17, and each subtheme is then discussed in turn.

**Figure 17: Thematic map, theme 3, Connor**

4.4.3.3.1 Subtheme: Strategies/ materials.

Throughout Connor’s interview, it was clear that the strategies taught during the CBT sessions had been beneficial for him in supporting him to regulate his emotions.
during some specific situations. The ‘gadgets’ were mentioned numerous times and it appears that Connor finds the gadgets useful to give him time to think before acting, “I might use the balloon gadget so then I get time to think and I start to think”. Connor acknowledged that the gadgets are sometimes beneficial in supporting him to change his perceptions of a situation and stated that “Well like when I get unhelpful thoughts I try to use the bar creator and if that fails I use the iron bar reverser, it sometimes works”, which suggests that although they may be useful to him at times, it is not yet consistent. Additionally, Connor made reference to using strategies discussed in the sessions to support him to stay in control of his emotions. This is illustrated in the following quote from his interview, “Well I got the Homunculi out and I started to think about them and they helped a little bit to calm me down”. It appeared that the strategies shared with Connor during the CBT sessions have supported him to begin to give himself time to think more clearly, and begin to remain more in control of his emotions post-CBT.

Connor’s teacher made reference to the usefulness of a particular worksheet shared with Connor from the CBT sessions in supporting Connor to identify and talk about how he was feeling, and highlighted that this had enabled Connor to successfully share his feelings with a member of staff. In reference to this, Ms Cotton stated that “that was the first time he had actually been able to talk to her about how he was feeling and to actually, to identify, identify how he was feeling, himself” which acknowledged the supportive nature of this particular material in promoting Connor’s autonomy in relation to identifying and expressing his emotions.

4.4.3.3.2 Subtheme: Changing perceptions.

‘Changing perceptions’ appeared to be a key aspect of the intervention for Connor, and this subtheme was derived from Connor’s interview. It appeared that post-CBT, Connor’s perceptions of being dropped off at school had altered slightly, and instead of focusing on the fact that he would be unable to see his parents for the duration of the school day, it appeared that he was able to broaden his perceptions and focus upon the positive aspects of the school day. This seemed to have had a
beneficial impact upon how Connor felt about being dropped off at school and a positive effect on his emotional regulation skills during the mornings. This is encapsulated by the following quote from Connor’s interview, “Well when I come to school it... I don’t feel sad... Because I think of the times I’ve had at school... The times that were happy”. Connor touched upon this subtheme again when discussing his ability to remain in control of his emotions if there was a disagreement between Connor and his peers. He mentioned that focusing upon helpful thoughts at challenging times helped him to remain happier and more in control of his emotions, “Thinking about the happy times with my friends and I feel happier and calmer”.

4.4.3.3.3 Subtheme: Ownership.

The subtheme of ‘ownership’ was derived from Connor’s interview. It appeared that Connor viewed the positive changes post-CBT to be due to a change in his own ability and an improvement in his own skills, and seemed to take pride in this. This was referenced when Connor was discussing how his ability to regulate his emotions had improved when getting dropped off at school, and when he was asked what had supported him to improve, Connor stated “well to be honest I make it easier myself”. This suggests that Connor’s perception of his own autonomy in regulating his emotions is improving.

4.4.3.3.4 Subtheme: Distraction.

The final subtheme within the overarching theme of ‘notable aspects of the intervention’ is that of ‘distraction’. This subtheme was elicited from the interview with Connor. Although Connor was able to discuss some strategies that he had found beneficial from the CBT intervention, it also appeared that Connor using the Homunculi characters as a distraction played a key role in supporting him to regulate his emotions on at least one occasion. When discussing a particular incident, Connor shared that he had chosen to use the actual paper Homunculi characters that he had made during the sessions to support him to regain control over his emotions. He highlighted that this was helpful and stated that “Well just
“seeing them and messing about with them made me laugh”, and that “Well [I] played with them a little bit and then I got happy” which suggests that the characters perhaps acted as a distraction from the current issue and this helped him to begin to calm down, rather than using any of the strategies or techniques that he had learned during the CBT intervention.

4.4.3.5 Summary of changes in emotional regulation (research questions 1 and 2).

Overall, the quantitative data suggest some mixed changes for Connor. Teacher reports suggest that Connor’s self-awareness scores decreased from pre-intervention to post-intervention and remained the same at follow-up, whereas parent reports suggest that his self-awareness skills remained the same from pre-intervention to follow up (although parent post-intervention data was not able to be used so changes are unclear). Teacher reports suggest a positive change in Connor’s self-regulation skills from pre- to post-intervention, then further positive changes from post-intervention to follow up, whereas parent data suggests a negative change in his self-regulation skills from pre-intervention to follow-up (although again, post-intervention data was not available to analyse). The qualitative data suggest that some positive changes had been recognised by both Connor and his teacher in relation to his emotional regulation at previously-identified trigger points, which had been the focus of some sessions. This appeared to have had a positive impact for Connor. However it appears that skills learnt in relation to particular trigger points had not been generalised to other situations.

4.4.4 Adaptations made to the programme for Connor (research question 3).

In answering research question 3, “What sorts of adaptations are necessary to enable primary-aged children with ASD to successfully access CBT based approaches?” it was necessary to consider all of the individual adaptations made to Connor’s CBT intervention which made it different from the manualised intervention presented in section 3.10 (Methodology).
Table 22 (below) portrays the bespoke adaptations made to the programme to enable him to fully access the learning opportunities. The table was completed from data recorded in the researcher diary and session plans.

**Table 22: Adaptations to the intervention for Connor**

<table>
<thead>
<tr>
<th>Session</th>
<th>Bespoke adaptations</th>
</tr>
</thead>
</table>
| 1       | Extra rapport building activities necessary to support Connor to feel at ease  
Benefitted from role play to support understanding of ‘rating’ emotions rather than understanding emotions in terms of their extremes |
| 2       | Use of coloured felt tip pens to design agents/ gadgets  
Connor linked agents to people he already knew with appropriate attributes |
| 3, 4, 5 | No adaptations necessary |

**4.4.4.1 Summary of research question 3.**

Few adaptations were made to the programme to support Connor to successfully access the learning opportunities and to support him to fully develop his
understanding of the concepts discussed. At the beginning of the intervention, Connor benefitted from additional rapport building activities to enable him to feel safe and at ease within the sessions. Connor also benefitted from engaging in role play to support his understanding of the concept of ‘rating emotions’, rather than understanding emotions as extremes.

The use of coloured felt tip pens was an adaptation for Connor when designing his agents/ gadgets. Additionally, Connor linked his agents to people he knew with similar attributes, for example, he named ‘the boss’ after somebody he knew who had similar attributes to what he wanted the boss to have.

4.4.5 Summary of Case 3.

Main findings from case three were as follows:

- Quantitative teacher data noted a small decrease in Connor’s self-awareness skills at post-intervention and no change at follow up. Improvements in self-regulation skills were noted at post-intervention and further improvements noted at follow-up
- Missing data meant that parent views are incomplete
- Teacher interview data suggested that whilst some differences were noted regarding Connor’s regulation of emotions in particular situations, this was perhaps not generalised
- Connor reported no discernible differences in self-awareness. Self-regulation appeared to decrease at post-intervention and return to the original level at follow up. He highlighted that certain aspects of the intervention were helpful although the extent to which strategies were used is unclear
- Few adaptations to the programme were made. Connor required extra time to build rapport with the researcher
4.5 Cross-Case Analysis

4.5.1 Introduction.

A cross-case analysis is necessary in order to draw out the similarities and differences between the three cases so that conclusions for this piece of research are fully informed. Yin (2014) stated that using a cross-cases analysis improves the robustness of findings, and should be conducted in a clear and systematic way. For this cross-case analysis, quantitative data are collated into a single summary table (see table 23). To improve clarity for the reader, self-regulation scores are presented in **bold italics**, and self-awareness scores are presented in *italics.*
### Table 23: Summary of quantitative data

<table>
<thead>
<tr>
<th></th>
<th>Parent</th>
<th>Teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-intervention</td>
<td>Post-intervention</td>
</tr>
<tr>
<td>Arthur</td>
<td><strong>Self-awareness</strong></td>
<td>10 (well below average)</td>
</tr>
<tr>
<td></td>
<td><strong>Self-regulation</strong></td>
<td>7 (well below average)</td>
</tr>
<tr>
<td>Bobby</td>
<td><strong>Self-awareness</strong></td>
<td>9 (well below average)</td>
</tr>
<tr>
<td></td>
<td><strong>Self-regulation</strong></td>
<td>7 (well below average)</td>
</tr>
<tr>
<td>Connor</td>
<td><strong>Self-awareness</strong></td>
<td>9 (well below average)</td>
</tr>
<tr>
<td></td>
<td><strong>Self-regulation</strong></td>
<td>11 (below average)</td>
</tr>
</tbody>
</table>
In relation to the qualitative data, all initial subthemes were entered into a table and then grouped to produce synthesised subthemes. Synthesised subthemes were then linked to a synthesised organising theme. This is displayed in table 24 below. The themes are marked (Arthur), (Bobby) and (Connor) to show which case they were originally from.

**Table 24: Cross case analysis**

<table>
<thead>
<tr>
<th>Original subthemes</th>
<th>Synthesised subtheme</th>
<th>Synthesised organising theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved recognition/understanding of emotions (Arthur)</td>
<td>Improved monitoring of emotions</td>
<td>Improved emotional regulation</td>
</tr>
<tr>
<td>Improved awareness/recognition of emotions (Bobby)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clearer reasons for dysregulation (Bobby)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recognising, identifying and communicating emotions (Connor)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shorter incidents of dysregulation (Arthur)</td>
<td>Improved modulation of occurrence, form, duration or intensity of</td>
<td></td>
</tr>
<tr>
<td>Emotional responses more balanced (Arthur)</td>
<td>emotional response</td>
<td></td>
</tr>
<tr>
<td>Improved ability to cope with previous trigger points (Arthur)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to regulate emotions before reaching ‘crisis point’ has changed (Bobby)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changes in emotional regulation related to previous trigger points (Connor)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance over time (Arthur)</td>
<td>Maintained over time</td>
<td></td>
</tr>
<tr>
<td><strong>Behaviour (Bobby /Connor)</strong></td>
<td>Positive effects on child’s behaviour</td>
<td>Positive effects of changes in emotional regulation</td>
</tr>
<tr>
<td>For child (Arthur)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wellbeing (Bobby /Connor)</td>
<td>Positive effects on child’s wellbeing</td>
<td></td>
</tr>
<tr>
<td>For child (Arthur)</td>
<td>Learning (Connor)</td>
<td>Positive effects on child’s learning</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>For child (Arthur)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For teacher (Arthur)</td>
<td>Positive effects for teacher</td>
<td></td>
</tr>
<tr>
<td>Some difficult times remain (Bobby)</td>
<td>Continuing difficulties in emotional regulation</td>
<td>Areas for development in relation to emotional regulation</td>
</tr>
<tr>
<td>Continuing difficulties in emotional regulation (Arthur)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No generalised improvement in emotional regulation (Connor)</td>
<td>No generalised improvement</td>
<td></td>
</tr>
<tr>
<td>Routine/boundaries (Bobby)</td>
<td>Some support still required for successful emotional regulation</td>
<td></td>
</tr>
<tr>
<td>Classroom strategies (Bobby)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult support (Bobby)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Each synthesised organising theme is explained below. It is useful to note that the first three relate largely to research questions 1 and 2 whilst the final theme related more directly to research question 3.

### 4.5.2 Research questions 1 and 2.

Across all three cases, there was some evidence from the qualitative data that emotional regulation improved post-intervention. All three children appeared to
have shown some reported improvement in their ability to accurately monitor their emotions, which included their ability to identify their internal feeling states. Improvements were noticed in relation to the ability of all three children to modulate their emotional responses. Improved modulation of the occurrence, form, duration and intensity of emotions were noticed for Arthur. Changes in relation to the modulation of the duration and intensity of emotional responses were noticed for Bobby and positive changes in relation to the modulation of the duration, intensity and occurrence of emotions were noted for Connor.

Positive effects of the changes in emotional regulation skills were reported across all three cases. Improvements in relation to behaviour and wellbeing of all participants, and improvements in the ability of Arthur and Connor to access learning opportunities were highlighted. Positive effects for Arthur’s teacher were also reported.

Although positive changes in emotional regulation skills were recognised across all three cases, it was highlighted that there were still areas for development in relation to emotional regulation skills for all three participants. In Arthur and Bobby’s cases, it was recognised that some difficult times remained, where support was required to ensure successful emotional regulation. For Connor, although it was highlighted that his emotional regulation skills in relation to previous trigger points had improved, emotional regulation improvements were not generalised across all situations. Bobby recognised the positive effects of the intervention whereas Arthur and Connor did not really appear to feel that they were in a better position post-intervention, suggesting that for two of the cases, self-efficacy was not enhanced.

4.5.3 Research question 3.

The final synthesised organising theme relates to the important aspects of the intervention that supported the participants to access it successfully. Aspects relating specifically to CBT strategies were highlighted as notable across all three cases, as was the developmental level and personalisation of the intervention. For
Arthur, adaptations were made relating to the structure of the intervention and the role play elements; for Bobby, adaptations tended to be related to incorporate his creativity and for Connor adaptations were mainly in terms of rapport building. All three participants benefitted from adaptations around role play. For Arthur, this included using props and enabling him to direct the role play, which appeared to enhance his sense of control and ownership of the intervention. For Bobby and Connor, role play adaptations centred around improving their understanding of different emotions. Further adaptations that were unique to Arthur involved negotiation around the logistics of the sessions, which included ensuring exact timings of activities were adhered to. For Bobby, further adaptations included enhancing the creative elements of the activities including the use of collage when designing his agents and gadgets. For Connor, unique adaptations centred around supporting him to link his agents to people he knew with desired characteristics, as well as additional rapport building activities.
CHAPTER 5: DISCUSSION

5.1 Introduction

This research investigated the use of CBT with primary aged pupils with ASD to see if it could be useful in supporting emotional regulation difficulties. Following a cross-case analysis (see Findings section 4.5), this final chapter presents an overview of the research area to illustrate to the reader how the current study fits into existing literature. Then, a critical evaluation of the findings from the current research project is presented, with reference to available and relevant literature. Research questions 1 and 2 are addressed first, followed by research question 3. Following this, researcher reflections, rival explanations and the theoretical contribution to knowledge are considered, as well as the implications of the current research in terms of implications for research, implications for local authorities and implications for educational psychologists.

5.2 Overview of Research Area

In order for the reader to position the outcomes of this study within the context of previous research, the section presents a very brief reminder of the main research findings to date of research related to using CBT with children and young people, and those with a diagnosis of ASD.

5.2.1 CBT with children and young people.

CBT appears to be a promising therapeutic approach to address psychological problems in children and young people (Fuggle et al. 2013) and is recommended by the NICE guidelines (NICE, 2005) for use with children and young people with depression. There is a growing body of evidence for the effective use of CBT with children and young people with a variety of difficulties including social and emotional difficulties (Downing, 2014). The majority of studies investigating the use of CBT with children have been based in clinic, although there are an increasing number of studies looking at the efficacy of the use of in-school CBT with children and young people.
5.2.2 CBT with children and young people with ASD.

The literature search (see section 2.10) has found promising support for the effectiveness of CBT in addressing a range of issues in children and young people with ASD, including anxiety, sleep difficulties, social skills and OCD. Three studies revealed by the literature search were of particular relevance to this study: Greig and Mackay (2005); Mackay and Greig (2008) and Scarpa and Reyes (2011). Greig and Mackay (2005) and Mackay and Greig (2008) used an in-school CBT intervention (The Homunculi Approach) to address emotional difficulties in children and young people with and without ASD and these studies provide tentative evidence for the effectiveness of the use of CBT with children and young people with ASD to address emotional regulation difficulties. A clinic-based study by Scarpa and Reyes (2011) provides some promising support for the use of CBT to support the emotional regulation skills of young children with ASD, although this research was clinic based and did not use any follow up measures to see if any changes were long-lasting.

5.2.3 The present study.

To the researcher’s knowledge, there are no published studies to specifically explore the use of in-school, individual, personalised CBT with children with ASD to aid emotional regulation skills. The current study aimed to contribute to knowledge by beginning to explore this area using a multiple-embedded exploratory case study to investigate the effects of the Homunculi intervention, delivered for an hour a week over five weeks by the researcher, in the child’s school. Each intervention was individual and personalised. Quantitative and qualitative data were collected to explore the impact of the intervention, and triangulated between pupil views, parent views and teacher views. Follow up measures were taken two months after the completion of the intervention to explore whether any changes were maintained. The following sections present a critical evaluation of the findings of the current study with reference to available and relevant literature.
5.3 Research Questions

The research questions that this study aimed to explore were as follows:

1. What is the level of self-reported, school staff reported and parent reported emotional regulation in a sample of children with ASD before and after individualised, in school CBT based approach sessions?

2. To what extent are any gains from individualised, in school CBT based approach sessions maintained at follow up?

3. What sorts of adaptations are necessary to enable primary-aged children with ASD to successfully access CBT based approaches?

Hereafter, sections 5.3 and 5.4 will explore research questions 1 and 2.

5.3.1 Quantitative data.

Given the small-scale nature of this research, it should be noted that any changes in the quantitative data considered in isolation should be treated extremely cautiously, given social desirability factors (see section 3.13.4) and reliability of a small sample size. These factors are considered in more detail in the limitations section of this chapter (see section 5.6).

The quantitative data show mixed results regarding pupil, parent and teacher reported emotional regulation at post-intervention and at follow up (see Table 28, section 4.5.1). The pupil data appear to show no discernible differences regarding self-regulation and self-awareness skills for Arthur and Connor pre- and post-intervention and at follow-up, whereas Bobby’s responses appeared to be more positive. Due to the limited validity and reliability of the pupil checklists (see section 3.7.1.1), pupil checklists were not able to be coded and so it was not possible to measure changes in pupil data in terms of raw scores or qualitative descriptors.
Parent data suggest very small positive changes in relation to Arthur’s self-awareness and self-regulation skills at post-intervention and follow up. Parent data for Bobby show no change from pre- to post-intervention for self-awareness or self-regulation, with both improving at follow-up (with self-awareness improving more than self-regulation). Parent data for Connor suggest no change in self-awareness from pre-intervention to follow up and a decrease in self-regulation from pre-intervention to follow-up. For Connor, post-intervention checklists were not returned to school and therefore could not be analysed. The researcher is aware of extra-therapeutic factors which may have impacted upon parent views of Connor’s self-regulation skills. For further information pertaining to this, see section 5.5.1.2.

Teacher data regarding participants’ self-awareness and self-regulation skills at the three time points are mixed. For Arthur, positive changes in both self-awareness and self-regulation were noted, particularly in relation to self-regulation. Bobby’s teacher noted no change in his self-awareness skills from pre- to post-intervention, and a very small positive change at follow up. Self-regulation improved from pre- to post-intervention but this was not maintained at follow-up. Connor’s teacher noted that Connor’s self-awareness skills decreased slightly from pre- to post-intervention and no change at follow-up, whereas self-regulation skills improved from pre- to post-intervention and improved again from post-intervention to follow-up.

Unlike the quantitative data from Greig and Mackay (2005), Mackay and Greig (2008) and Scarpa and Reyes (2011), the quantitative data collected in this study, used alone, are not comprehensively reliable and valid in answering the research questions, particularly given the limitations of using checklists to collect quantitative data (see section 5.6.3) and the scale of the research. However, they do provide some information to build up a more holistic picture of the effects of the intervention for the participants.
5.3.2 Qualitative data.

In relation to the qualitative data, the cross case analysis (see section 4.5) produced three synthesised organising themes that are relevant to the above research questions:

- Improved emotional regulation
- Positive effects of changes in emotional regulation
- Areas for development in relation to emotional regulation

It is perhaps difficult, given the small scale of this study, in addition to the absence of measurable outcomes in the study design to draw definitive conclusions in relation to RQ1 and RQ2. For this reason the sections below will revisit some of the data from the teacher and child interviews to illustrate specific examples of tangible progress and development needs for the children involved in the research.

5.3.2.1 Improved emotional regulation.

Emotional regulation is the ability to monitor, evaluate and modify emotional reactions (Thompson, 1991) and for the purpose of this study, defined as the process of “initiating, avoiding, inhibiting, maintaining or modulating the occurrence, form, intensity or duration of internal feeling states, emotion-related physiological processes and/or behavioural concomitants of emotion” (pp. 260) (Eisenberg et al. 2004), (please see section 2.7 for further information pertaining to this).

As discussed in section 2.7.2, several researchers highlight the importance of emotional regulation for children (Garnefski et al. 2006; Konstantareas & Stewart, 2006; Onchwari & Keengwe, 2011), and thus, the importance of being able to support children to develop emotional regulation skills is clear. As stated by Mazefsky et al. (2013), poor emotional regulation is commonplace amongst children with ASD, who may tend to have reduced emotional regulation which influences impulsive reactions to emotional stimuli and results in behaviours such as tantrums, aggression and self-injury. Thus, the importance of finding effective
ways of supporting children with ASD to develop emotional regulation is paramount. Scarpa and Reyes (2011) carried out a pilot study using CBT to improve emotional regulation with five to seven year olds and found that CBT led to significantly fewer outbursts, shorter outbursts and a reported increase in the knowledge of the children relating to emotional regulation strategies. Although some aspects of the current study resonate to some extent with those of Scarpa and Reyes (2011), the qualitative data from the current study were more mixed. One of the synthesised organising themes derived from the cross case analysis of the qualitative data (see section 4.5) is ‘improved emotional regulation’. Across all three cases, qualitative data suggest that there had been some positive change in relation to some aspects of the participants’ emotional regulation skills. A synthesised subtheme from the qualitative data from all three cases within the synthesised organising theme of improved emotional regulation was that of ‘improved monitoring of emotions’. Laurent and Rubin (2004) suggest that the core social communication challenges of ASD reduce emotional regulation ability by reducing the child’s ability to communicate, share and interpret emotional states as well as their ability to consider another’s perspective and it appears that there were some positive changes in participants’ ability to monitor their own emotions. For example, Bobby’s teacher stated that “I think he is more aware of the fact that he does become angry” and Connor’s teacher highlighted that “that was the first time that he had actually been able to talk to her [teaching assistant] about how he was feeling and to actually, to identify, identify, how he was feeling, himself”. A further synthesised subtheme within the overarching synthesised theme of ‘improved emotional regulation’ was that of ‘improved modulation of occurrence, form, duration or intensity of emotional response’ and this again was apparent across all three cases. Connor’s teacher reported that “we’ve had very few incidences in the morning of him being unsettled which is wonderful”, suggesting positive changes relating to Connor’s ability to modulate the occurrence of emotional responses in relation to previous trigger points. Bobby himself stated that “it’s easy to keep calm now” and Arthur stated “sometimes I’m not getting as mad”, suggesting that both Bobby and Arthur feel that perhaps they are more able to regulate the intensity of emotional responses. Furthermore, both Arthur’s and Bobby’s teachers pointed out
that any incidents of dysregulation appeared to be shorter, with Bobby’s teacher stating “he seems to calm down quick... more quickly” and Arthur’s teacher highlighting how he “goes back to perfectly happy very quickly now”. While the examples above do not necessarily indicate a measurable improvement in general emotional regulation, they offer evidence of progress in particular domains (for example, becoming calm; discussing and describing feelings).

5.3.2.2 Positive effects of changes in emotional regulation.

Across all three cases, qualitative data suggested that changes in emotional regulation arising during the course of the intervention had brought about positive effects, and a synthesised organising theme from the cross-case analysis was ‘positive effects of changes in emotional regulation’. Data suggested that in all three cases teachers and children noticed some positive changes relating to some aspects of participants’ behaviour. Connor’s teacher acknowledged that Connor “seems much, much calmer” enabling him to settle into the school day more easily; “he’s normally in class and settled straight away with the other children now”. Connor’s teacher reported that although Connor’s behaviour appeared to have changed in some situations, this was not generalised (see section 4.4.3.1.2). Connor also acknowledged that his reactions to some challenging situations had changed. Pre-intervention, Connor tended to become angry if he perceived that somebody was trying to annoy him. During his interview, Connor stated “when people wind me up, I just try to ignore them”. Bobby highlighted, during his interview, that “I am able to keep in control, I haven’t been told off for ten weeks, because of them [The Homunculi], they have helped me so much”. Perhaps strategies from the intervention were supportive in enabling Bobby to remain in control of his emotions and the behavioural manifestations of his emotions. Previous literature within the field of emotional regulation suggests that emotional regulation skills facilitate positive behaviour (Jahromi et al. 2013), and Konstantareas and Stewart (2006) suggest that emotional regulation supports a child’s ability to cope with frustration. This is consistent with qualitative data from the current study within which both teachers and children identified tangible improvements (e.g. quicker de-
escalation; greater access to learning opportunities; reduced frequency of outbursts). Additionally, Mazefsky et al. (2013) indicate that limited emotional regulation skills in ASD result in behaviour such as tantrums and aggression (see Literature Review section 2.7.3 for reasons why children with ASD may have difficulties with emotional regulation). Data from all three cases suggested qualitative changes in participants being able to regulate their emotions more readily. For example, these had the effect of reducing the number and intensity of ‘meltdowns’ for Arthur, improved ability of Bobby to regulate his emotions before reaching ‘crisis point’, and a reduction in the number of incidents relating to a specific trigger point for Connor. Although this study did not use a tangible measure of behaviour and therefore is unable to measure whether or not there was a discernible change in participants’ behaviour post-intervention, it appears that teachers and participants perceived some positive changes in some aspects of their behaviour. Using a concrete measure of behaviour would be an interesting direction for further research (see section 5.7.2).

Data suggested that in all three cases teachers and children noticed some positive changes relating to some aspects of the children’s wellbeing. Arthur’s teacher stated that Arthur appeared to have a “greater sense of wellbeing” and attributed this to reduced emotional outbursts. Bobby himself said “The Homunculi tell me nice thoughts and achievements I have made to make me feel good” and “I guess it’s me keeping me from going [getting] low self-esteem”. Additionally there were teacher reports that Arthur and Connor appeared to have improved ability to access learning opportunities which were perceived to be as a result of improved emotional regulation. Jahromi et al. (2012) suggest that emotional regulation skills support a child’s ability to adjust to a classroom environment, which was highlighted as a positive effect in Connor’s case, whose teacher stated how he appeared to be more relaxed in the classroom. This may have improved Connor’s ability to access learning opportunities, a subtheme which was also highlighted in relation to Arthur. Differences in Arthur’s emotional regulation skills were noted to have had a positive effect for the teacher, who suggested that he was more able to support Arthur within the classroom than he had been previously stating that “I
certainly noticed more recently him still finding things that he would get upset about but being able to control himself a bit more” and that “since the CBT erm really I haven’t had to speak to the SENCO at all about his emotions and about him getting upset” suggesting that Arthur’s teacher is perceiving Arthur’s difficulties to be less severe which had enabled the teacher to support him more effectively without additional SENCO support. Ashburner et al. (2010) suggest that LAs have concerns regarding the behaviour and emotional regulation abilities of children and young people with ASD in mainstream school environments. In this sense, it may be promising that positive effects were highlighted for a member of school staff as well as the pupils themselves. As Macklem (2008) indicated that emotional regulation is critical for school success, perhaps the positive effects of the intervention on emotional regulation reported across all three cases, if allowing greater curriculum access might potentially be supportive of school success. While exploration of any links between changes in emotional regulation and learning outcomes was not a focus of the current study, this would be an interesting direction for future research (please see section 5.7.2).

**5.3.2.3 Areas for development in relation to emotional regulation.**

A synthesised organising theme produced by the cross-case analysis was ‘areas for development in relation to emotional regulation’. Although positive changes in emotional regulation skills were highlighted within the synthesised organising theme of ‘improved emotional regulation’, it was clear across all three cases that areas for development in relation to emotional regulation still remained. Greig and Mackay (2013) suggest that generalisation is inherently difficult for children with ASD and particularly in Connor’s case it appeared that although he had improved his ability to regulate his emotions in certain situations and contexts it was not generalised. For example, during the teacher interview, the teacher was able to describe how Connor’s emotional response to previous trigger points had improved, yet when asked if she had noticed any other changes in addition to Connor’s ability to regulate his emotions more easily during certain situations, his teacher replied “not really”, indicating that positive changes noticed were perhaps
more specific to certain times or situations and were not considered to be a general change. Connor himself reported that he felt there were still areas for development relating to his emotional regulation skills although was able to describe ways in which his ability to regulate his emotions had changed. In Bobby’s case, it appeared that the routine, boundaries and classroom strategies as well as adult support available within the classroom were still necessary to support Bobby’s ability to regulate his emotions successfully. Schools, as organisations, vary considerably and it is interesting to consider the extent to which the ASD knowledge and expertise of the staff within the schools in this study (which were both mainstream primaries with resource provision for ASD) supported the participants to develop their emotional regulation skills, and whether similar patterns would be found in mainstream primary schools without resource provision. Furthermore, although all three cases were able to identify some new coping strategies to use when frustrated, it appeared that they were perhaps not generalised for Connor, and some difficult times remained for Bobby and Arthur. Arthur’s teacher highlighted that Arthur was dealing with difficult situations differently post-CBT and perceived this to be a positive change for him as he was not becoming very distressed in school, as he had been known to previously. However, it could be the case that Arthur may be internalising rather than externalising his feelings. Although Rieffe et al. (2011) found that hiding emotions from others contributed less strongly to the prediction of worry and rumination in children with ASD than typically developing children, it is important for school staff to recognise that Arthur could potentially require further support at these times to share his feelings with a trusted and skilled adult, for example he could require debriefing in the form of perhaps a discussion with a trusted teacher at these times. This suggests that although Arthur may be displaying fewer externalised behaviours, he may require more therapeutic input to ensure that he does not internalise his feelings. As stated by Greig and Mackay (2013), generalisation is inherently difficult for children with ASD, and so Arthur may require further input focusing specifically on internalisation of emotions.
5.3.2.4 Summary of research questions 1 and 2.

Data relating to Arthur suggested that self-regulation and self-awareness improvements were noted by the teacher and parent at post-intervention and at follow up, although Arthur himself did not report self-awareness or self-regulation gains. Teacher interview data suggested that observable differences had been noted relating to Arthur’s management of difficult situations, and whilst Arthur was positive about some aspects of the intervention, he appeared to feel that emotional regulation remained a difficulty for him. Data relating to Bobby suggested that no changes in self-awareness or self-regulation were noted by his parent at post-intervention, although a small improvement in self-regulation and a slightly bigger improvement in self-awareness (from well below average to average) were noted at follow up. No discernible differences in self-regulation were noted by Bobby’s teacher, and an improvement in self-regulation at post-intervention was not maintained at follow up. Teacher interview data for Bobby suggested that whilst some observable differences were noted regarding his recognition of feelings and him appearing to be calmer in class, he still required support to regulate his emotions effectively. In relation to Connor, missing data meant that parent views are incomplete. Teacher data for Connor noted a small decrease in self-awareness at post-intervention and no change at follow up. An improvement in self-regulation skills was noted at post-intervention and further improvements noted at follow up. Teacher interview data for Connor suggested that whilst some differences were noted regarding Connor’s regulation of emotions related to certain situations, it did not appear to be generalised. Connor reported no apparent differences in self-awareness, and pupil data noted that his self-regulation skills decreased at post-intervention and returned to the original level at follow up. He highlighted that certain aspects of the intervention were helpful.

This exploratory case study presents mixed quantitative findings regarding the effect of in school, individualised CBT upon the emotional regulation skills of children with ASD. The maintenance of any positive changes over time also appears to be mixed, according to the quantitative data. The qualitative data across all three
cases highlighted positive changes in emotional regulation and the effects of this upon other areas, including behaviour, wellbeing and access to learning.

Outcomes appear to show no clear evidence from the quantitative data of improvements in emotional regulation skills. Within the qualitative data, the picture is again rather mixed. Some improvements were highlighted as well as some ongoing difficulties, along with some specific tangible evidence of the use of strategies from the intervention being used within the classroom, and there is some evidence to suggest that changes were maintained over time. While the overall outcomes are mixed, there is specific evidence from the qualitative data in particular, especially regarding the observed use of strategies which provided tentative evidence that the Homunculi CBT intervention may have the potential to begin to support children with ASD to develop some skills to support their ability to regulate their emotions more effectively and is worthy of further investigation, potentially with a larger number of children. However, it is important to highlight that the findings from the present study suggest that further support is needed (relating to emotional regulation) across all three cases.

The mixed findings from the current study are perhaps less positive than previous studies in this area. Using a single case design Greig and Mackay (2005) found stronger evidence of the effectiveness of the Homunculi Approach in addressing anxiety, depression, anger and stress, than the current study found in relation to improving emotional regulation. This suggests that the Homunculi intervention was more successful in enabling a young person with ASD to develop social and emotional skills, although emotional regulation was not specifically measured, the intervention was over a longer period of time and the child was a secondary school pupil. The findings of the current study appear similar to those of Scarpa and Reyes (2011) who found that post-CBT, parents reported that their child showed lower intensity and better regulation of mood overall, as well as shorter duration per episode. The findings of the current study regarding the extent of the effectiveness of individualised, in-school CBT with primary aged children with ASD to support emotional regulation are inconclusive, yet it provides some specific, tangible
examples which suggest that in school, individualised CBT may aid emotional
regulation in primary aged children (year 4 and 5) with ASD, and suggests that
further research may be warranted in this area to explore this further (please see
section 5.7.2).

5.4 Research question 3

Research question 3 is as follows:

What sorts of adaptations are necessary to enable primary-aged children
with ASD to successfully access CBT based approaches?

The cross case analysis highlights the usefulness of individualising the intervention
for each of the three participants. Personalisation to the intervention appeared
helpful to all three participants to enable them to fully access the learning
opportunities during the sessions. This study offers a perspective into the feasibility
of using CBT techniques with pupils with ASD. Adaptations to the intervention
tended to be relatively minor, as is usually the case with CBT adaptations for
children with ASD (Attwood & Scarpa, 2013) but nevertheless interesting. For
Arthur, adaptations centred around logistics and role play and tended to enable
him to have elements of control during the sessions. The structure of the session
was important to him and many adaptations for him related to negotiating the
timing of activities. It was important that times were adhered to in helping Arthur
to feel secure. Additionally, he benefitted from the researcher scribing for him at
times during the sessions, consistent with adaptations suggested by Attwood and
Scarpa (2013). For Connor, adaptations related to additional rapport building to
enable him to feel safe and secure within the sessions as well as Connor linking his
agents to people he knew with the desired characteristics. Bobby benefitted from
additional creative activities, for example, collage and brightly coloured felt tip pens
when designing his agents and gadgets. All three participants required adaptations
around role play. Arthur benefitted from using props within role play and directing
the researcher to play certain roles in certain ways, whereas Bobby and Connor
benefitted from role play relating to their understanding of emotions. Connor
found role play useful in developing his understanding of ‘rating’ emotions whereas Bobby found it useful to act out emotions through dance, for example, a ‘happy dance’. Adaptations throughout the implementation of the intervention came about through the researcher’s ability to notice and adjust to support the child’s learning, as well as having a theoretical understanding of the needs of children with ASD. A level of expertise and insight was required on the part of the researcher to respond flexibly to the needs of the children whilst remaining true to the principles of the intervention. It is difficult to say whether the programme would have worked without these adaptations but it is probable that the pupils would not have engaged with the intervention on the level that they did in this study, particularly for Arthur, who appeared to need a certain element of control over the sessions in order to feel safe.

Rotheram-Fuller and MacMullen (2011) gathered information from existing studies investigating the use of CBT with children with ASD. They recommended a number of adaptations to CBT to help children and young people with ASD to access it, for example, supporting the child’s ability to understand high-level language through the use of visuals, hands on activities, written worksheets, incorporating special interests and providing creative outlets for expression, for example, drawing. The adaptations in the current study seemed to go one step beyond those recommended by Rotheram-Fuller and MacMullen (2011) (many of which tended to be provided as part of the manualised intervention) and tended to be related to the researcher ‘noticing and adjusting’ (BPS, 1999), where the researcher noticed the child’s individual needs and adjusted the sessions accordingly to accommodate them. Without specific knowledge or training regarding CBT and ASD, it may have proved difficult to respond flexibly to children’s needs whilst remaining mindful of the importance of maintaining implementation fidelity. Although Stanley et al. (2014) provided evidence that paraprofessionals without previous training in mental health can deliver CBT to older adults with generalised anxiety disorder successfully (with considerable training and supervision as well as a previous degree in a related field, for example, psychology), the ability to implement CBT
interventions successfully with children with ASD may also require considerable training and supervision, with training relating to ASD as well as CBT.

5.5 Researcher reflections

The following sections outline some researcher reflections regarding the current study.

5.5.1 Rival explanations.

Rival explanations relating to the current research study were carefully considered. It is understood that potentially the findings of this study may be attributed to other elements or circumstances. Some rival explanations of the current study are discussed below.

5.5.1.1 Extra-therapeutic factors.

Extra-therapeutic factors relate to other factors or circumstances in the life or environment of the participants which may have influenced the findings of the current study. Extra-therapeutic factors can have both positive and negative factors which can affect the results in different ways and can be markedly influential in small scale research. According to Asay and Lambert (1999), ‘Lambert’s Pie Chart’ estimates that the model or technique of therapy accounts for around 15% of any effect; hope and expectancy on behalf of the client accounts for around 15% of any effect; the therapeutic relationship between the therapist and the client accounts for around 30% of any effect and extra-therapeutic factors account for around 40% of any change. The first extra-therapeutic factor which may have had an impact upon the findings of the current study is that the schools attended by all three participants were mainstream primary schools with resource provision for ASD, and staff in such schools are likely to have had experience of working with children with ASD as well as potential training into how to support children with ASD effectively. This understanding may have supported children to develop their emotional regulation skills more successfully throughout the course of the intervention than if they attended a mainstream without the expertise and experience of staff in a
mainstream school. This may be an interesting direction for future research (see section 5.7.2). Extra-therapeutic factors were hinted towards during the interview with Arthur’s teacher, when reference was made to Arthur having a good year. It may have been the case that the timing of the intervention was fortuitous in allowing and supporting Arthur to build on progress he had made within year 5 and that it built upon good existing good practice and maturation which was allowing Arthur to make positive changes.

Extra-therapeutic factors were highlighted in relation to Connor. After the intervention was complete but prior to the follow-up, Connor was experiencing changes at home including the family pet moving to live with the grandparents, and the grandparents moving house. The added elements of change for a child with ASD and difficulties accepting change may have influenced his ability to regulate his emotions successfully, particularly at home. As the parent checklists at post-intervention were not returned to school, it is not possible to tell the extent to which this has impacted upon parent perceptions of emotional regulation but it is important to consider this perspective. This suggests that across the research, both positive and negative extra-therapeutic factors may have had an influence on research outcomes.

Further extra-therapeutic factors could have attributed an improvement in behaviour to being involved in a study, not necessarily to the study itself. For example, critics may argue that the participants received additional attention for participating in the study which may have led to them showing improvements in the behaviour of interest. Due to the nature of the research being over a prolonged period of time (including the follow-up time), with the intervention only for one hour per week for five weeks, it is considered to be unlikely that the children will have been able to display the positive changes highlighted in the findings section for such a long time solely due to being involved in a study. As there are examples through the qualitative data of specific and tangible progress relating to emotional regulation, for example Bobby stated that “I am able to keep in control, I haven’t been told off for ten weeks because of them [The Homunculi], they have helped me
so much”, it seems that the likelihood of any such changes being due to such effects is reduced.

5.5.1.2 Social desirability bias.

Social desirability bias relates to the tendency of participants to answer questions in a manner that will be viewed favourably by others. Although it is not possible to tell how far social desirability bias has influenced participants’ responses to checklists and semi-structured interview questions, the researcher made a deliberate effort to minimise the risks of this happening. When communicating with teachers and parents throughout the study, the researcher ensured that they were made aware of the importance of sharing their real, honest views with the researcher in order to produce accurate and honest research. The researcher emphasised her interest in finding suitable ways to support children with ASD and that the Homunculi is one of many different types of intervention, and it was highlighted that it was important that people could say how they felt and what they thought, in order for the researcher to accurately explore the impact of the intervention. When working with children, it was made clear to them that being honest in their responses is important. The researcher is aware that there may have been a power imbalance between the researcher and the children, and made a conscious effort to reduce this, for example through asking the children to call her by her first name, and by emphasising the importance of gaining the honest views of the child. During this study, child checklists were completed with the researcher. In order to have reduced the risk of social desirability bias further, the children could have completed their checklists with a different member of school staff. During the semi-structured interviews with both teachers and children, the researcher used neutral, open questions to encourage participants to answer honestly and to avoid leading them in their answers.

5.6 Critique of the Study and Limitations

The following section presents a critique of the current study and an exploration of its limitations.
5.6.1 Case study design.

The exploratory multiple-case study design was deemed appropriate and useful to explore the use of in-school, individualised CBT with children with ASD to support emotional regulation skills. This specific area of interest had not been researched prior to this study (to the researcher’s knowledge). The exploratory nature of the research enabled some in-depth knowledge to be gained to inform research areas for further research.

5.6.2 Sampling.

Recruiting participants for this research study was difficult due to the specific criteria, including a diagnosis of ASD, difficulties with emotional regulation and specific year groups. Therefore participants were recruited through opportunity sampling. Participants were not screened beforehand to assess their cognitive ability. A useful direction for future research may include a cognitive screen prior to completing the intervention to begin to establish to what extent low cognitive ability might be a barrier to accessing CBT and therefore managing emotional regulation. Due to opportunity sampling, all of the pupils in the present study were male. It may be interesting for future research to investigate the use of CBT with girls with ASD and emotional regulation difficulties. Furthermore, all pupils in this study attended mainstream primary schools with ASD resourced provision. Therefore, during this study it was difficult to control for any potential ‘good practice’ variables. Research in other contexts would be viable.

5.6.3 Checklists.

A particular limitation of this study is through the use of the Faupel (2003) Emotional Literacy Checklist to measure emotional regulation. The Faupel (2003) checklists are based upon the Goleman (1996) dimensions of emotional literacy and thinking around emotional regulation has moved on somewhat since the outset of this research. More robust and empirical evidence for the dimensions of emotional literacy have provided better conceptual models (e.g. CASEL, 2013), but at the
outset of the research, no measures were available (to the researcher’s knowledge) that tapped into these dimensions. The Faupel (2003) checklists, however, enabled the data to be triangulated between pupil views, parent views and teacher views. Although the teacher and parent checklists are coded to enable self-regulation and self-awareness to be measured, a limited number of items on the checklists relate to these concepts. Furthermore, due to reliability and validity issues, pupil checklists are not coded. However, the researcher could not find any other valid and reliable measures of emotional regulation that could be triangulated between pupils, parents and teachers, and so Faupel (2003) seemed to be the ‘best fit’ to provide some quantitative data to inform the findings of this study. Threats to the validity of the checklist data may also come from taking measures at static points in time (pre- and post-intervention and at follow up). Other factors or events (extraneous variables) may have caused any change observed, and it is not possible to control for any developments within the participant that would have occurred without the intervention (e.g. maturation). A more sensitive tool utilised over a longer period of time may have been more accurate and provided more detailed information regarding a pupil’s emotional regulation skills over time.

A further limitation of the use of checklists is regarding the use of checklists with the ASD population. Difficulties of using checklists with children with ASD include the fact that completing checklists and scales like the Faupel (2003) Emotional Literacy Checklist require a degree of self-awareness which may be difficult for some children with ASD. In the current study, it appears that a lack of self-awareness led to Arthur in particular rating himself very highly for all aspects measured by the checklists, which was not reflected in the way that he was viewed by others including his parents and teachers. However, emotion experience is an internal process to which only respondents have direct access to and so it is important that participants are given the opportunity to express their views. A more visual or tangible way of the pupils self-measuring their emotional regulation skills may have supported their understanding of what they were being asked and their ability to reflect the views accurately. However, the researcher is not aware of any standardised checklists that provide this to measure emotional regulation.
Results of the quantitative strand of this study suggest that The Homunculi Intervention had a minimal impact upon emotional regulation. However, the qualitative data suggest that changes in some aspects of emotional regulation had been noticed. With retrospect, it is possible that the quantitative measures were limited in comparison with the types of things that were reported in the qualitative data, perhaps affecting the quantitative change shown.

5.6.4 Semi-structured interviews.

Conducting semi-structured interviews with teachers and children enabled rich data to be gathered and analysed in order to inform the findings. Due to time constraints for the teachers, their interviews were relatively short (around 20-30 minutes) and the researcher would have preferred to have been given more time to conduct these interviews. However, this was not possible given the demands placed upon teachers during the school day. Rich information was still able to be gathered in the relatively short amount of time, and enabled the data set to remain manageable given the time constraints of this research project.

According to Yin (2014), response bias is a potential limitation of using semi-structured interviews. The researcher was mindful of this throughout the interviews and through the entire research process. During discussions with school staff, the importance of sharing their true views was emphasised and the wording of questions was designed to be neutral so that respondents were not led in their answers.

Conducting semi-structured interviews with the children also carried the risk of a response bias. This could have been avoided through an independent researcher conducting the interviews with the children, although due to the nature of ASD, this may have been more difficult for the children, as the researcher had built up a rapport and an understanding of how to support the pupil participants in this study to share their views. The researcher was mindful of the potential for response bias throughout the interviews and again was mindful of the wording of questions.
5.6.5 Triangulation.

The term ‘triangulation’ refers to the use of multiple sources to enhance the vigour of a piece of research (Robson, 2011). Please see section 3.6.1.7 for detailed information relating to triangulation. The methodological triangulation and the data triangulation in this study allowed the validity of the research to be enhanced and enabled a holistic picture to be gained. Triangulation could have been enhanced further through the use of semi-structured interviews with parents, although due to the time constraints of this research project, this was not feasible. The inclusion of the views of other key people in the child’s life would have enhanced this study further, for example teaching assistants. Again, the time-consuming and challenging nature of case study research meant that the data set had to be kept manageable so this was not possible. As it stands, the findings of this study may be strengthened as they are based upon a range of sources of converging information. However, the quantitative and qualitative data sets do not appear to agree. In retrospect, it appears that the quantitative measures somewhat limited the respondents’ ability to share detailed views (see section 5.6.3).

5.6.6 The Homunculi Intervention.

The Homunculi Intervention is deemed by the researcher to have potential for supporting children with ASD. The flexibility of the programme enables it to be personalised and adapted for individual children, and all three participants appeared to enjoy their sessions. As stated by Mazefsky et al. (2013), emotional regulation in children with ASD is affected by difficulties with cognitive flexibility leading to maladaptive strategies for coping with heightened emotions. The use of the thoughts and feelings screen in The Homunculi Approach began to show participants how they can interpret situations differently and that some ways of perceiving a situation may be more beneficial than others. All three children identified ‘positive thinking’ as a helpful technique to support them to remain in control of their emotions.
Although critics could argue that additional factors may have influenced the changes in emotional regulation shown in the findings of this study (see section 5.5.1, rival explanations), The Homunculi Approach is deemed by the researcher to be useful in aiding the development of emotional regulation. Samson et al. (2012) recommended that children and young people with ASD would benefit from the following things to support their emotional regulation:

- Being taught to attend to and discriminate between emotions
- Strategies to improve their ability to respond flexibly to emotions
- Development of cognitive processes associated with reappraisal
- Support regarding their perspective-taking abilities

The Homunculi Approach enables each of the above points to be addressed in a visual way that supports the metacognitive abilities of children with ASD. The intervention for this study, however, required some adaptations to enable emotional regulation to be fully addressed and to ensure that the participants could identify different emotions. See section 3.10 (Methodology) for further details pertaining to this. Due to the adaptations made to the intervention, some critics may argue that implementation fidelity is reduced and this may impact negatively upon outcomes. However, as stated by Durlak and DuPre (2008), “fidelity and adaptation frequently co-occur and each can be important to outcomes” (pp. 341).

Due to the exploratory nature of this research, as well as a focus upon the personalisation of CBT to suit the needs of individuals with ASD, adaptations were necessary. As stated by Durlak and DuPre (2008), adaptations are often inevitable for school-based programmes and it could be argued that adapting some elements of the intervention to suit the individual may have enhanced outcomes, although this was not specifically measured.

5.7 Research and Practice Implications

The following section explores the possible theoretical contributions to knowledge and is then followed by an exploration of the implications of this study for research, practice, and for The Homunculi Approach itself.
5.7.1 Theoretical contribution to knowledge.

This study aimed to contribute to the understanding of the use of CBT with children with ASD to support emotional regulation. This study was the first of its kind to independently evaluate The Homunculi Approach (Greig & Mackay, 2013). The findings of this study suggest that there may be potential of this type of therapeutic work with children with ASD, and contributes to a better understanding of what type of therapeutic work that may help this heterogeneous group of children, contributing to the knowledge base around the use of therapy by EPs. Furthermore, it emphasises the importance of the notion of ‘noticing and adjusting’ when working therapeutically with children with ASD to enable them to access the learning opportunities.

This study appears to shed some light on the reasons behind why children with ASD are able to access The Homunculi Approach, in comparison to having more difficulty accessing other therapeutic modalities. The development of the intervention is underpinned by a clear theoretical understanding of the theories of autism (Greig & Mackay, 2013). The visual and practical nature of The Homunculi Approach reduces the demand on the use and understanding of language which is often present in other therapeutic modalities. The style of the intervention provides support for the child to develop their ability to think metacognitively and it addresses theory of mind difficulties through providing the means to allow the child to stand back from their own thinking and to take on new perspectives, enabling them to begin to consider the thinking and behaviour of other people. The development of ‘agents’ and the development of a story involving these agents support the children in the current study to do this. Furthermore, weak central coherence is addressed through providing a reflective capacity through which the child is enabled to build up a ‘big picture’ of how thoughts, feelings and behaviours are linked (Greig & Mackay, 2013), and the use of the ‘thoughts and feelings screen’ was deemed useful for this in the current study.

The Homunculi Approach contains the modifications recommended for use of CBT with children with ASD (e.g. see Rotheram-Fuller & MacMullen, 2011). This study
illustrates the importance of noticing and adjusting to enable the participants to fully engage with the intervention. As the researcher is currently completing a Doctorate in Educational and Child Psychology, she has a theoretical knowledge of CBT, a psychological understanding of learning, and an extensive knowledge of ASD, and therefore this supported the researcher’s ability to notice and adjust the intervention effectively without compromising the implementation of it. However, the extent to which this would be possible without the prior knowledge and experience of this type of work is questionable and although Greig and Mackay (2013) state that the intervention is designed to be used without training being a prerequisite, findings from this study suggest that further research would be required to establish whether this is feasible. Interventions used in earlier studies that utilised the Homunculi Approach (Greig & Mackay, 2005; Mackay & Greig, 2008) were also delivered by trained Educational Psychologists with extensive experience of working with children and young people with ASD. Findings from the current study relating to research question 3 suggest that had the researcher not adapted the intervention, it is questionable whether it would have been accessible to one child (Arthur).

The visual nature of The Homunculi Approach might have been more accessible to children with ASD, given that young people with communication difficulties may have difficulty in expressing their difficulties (Dalton, 1994). The findings of this study are useful due to the limitations that have been found with using other types of therapeutic work with children with ASD which rely more heavily on verbal expression and/or understanding the perspectives of others, for example Motivational Interviewing (Kittles & Atkinson, 2009; Snape & Atkinson, 2015). Given the current understanding of the nature of some pupils with ASD to be at risk of developing mental health problems, there is a necessity of therapeutic work with this heterogeneous group to provide suitable support. However, as highlighted by Greig and Mackay (2013), the therapeutic need is likely to be larger than the capacity of specialist practitioners (e.g. EPs) available to deliver it. Given the importance of specialist knowledge in adapting the programme, there is a potential opportunity here for EPs to deliver training regarding the aspects of ASD and
learning that are likely to be beneficial in enabling paraprofessionals to deliver the programme successfully. Additionally, there is also a role here for EPs to provide supervision for paraprofessionals who are delivering the intervention.

The current study is the first study that the researcher is aware of that investigates the use of individualised CBT to support emotional regulation skills in children with ASD that is carried out in school, and the first carried out with key stage two pupils, to include a follow up measurement. Although the limitations of the quantitative measures used in this study are acknowledged (see section 5.6.3), the use of a follow-up measure was useful to provide some information of maintenance over time and promotes the use of follow-up measures in future studies in this area and was the first study (to the researcher’s knowledge) to investigate any effects of a manualised intervention using an individualised CBT approach aimed to support emotional regulation over a longer period of time. This study was also the first (again, to the researcher’s knowledge) to establish child and teacher views regarding the CBT intervention to support emotional regulation. Scarpa and Reyes (2011) included parent views, but as it was clinic based they did not include teacher views. As children spend a large proportion of their time at school, their class teacher is likely to be a person who knows them well and is able to reflect accurately upon any changes from their perspective. Furthermore, given the importance of ascertaining pupil views (Clark, 2005; Uprichard, 2008), this study is the first of the published studies specifically regarding the use of CBT with children with ASD to support emotional regulation that places an emphasis on collecting children’s views qualitatively as well and quantitatively. This enabled rich information to be gathered from the child’s perspective, part of the unique contribution of this research study.

5.7.2 Implications for research.

This exploratory study contributes to current knowledge regarding the use of The Homunculi Approach, a manualised CBT intervention, with children with ASD, and gains some understanding of the potential effectiveness that CBT based approaches may have in supporting emotional regulation in children with ASD by providing a
‘snapshot’ of the use of this intervention with children with ASD and how to personalise it to ensure accessibility. The case study methodology of this research was deemed appropriate to provide detailed understanding which is useful in informing potential directions for future research. Further replication case studies are required in this area prior to larger scale research being conducted. As the sample of the current study was made up of male participants, case studies with female participants may shed some further light on this research area. Additionally, further case studies may investigate the use of CBT with children with ASD from different ethnicities, backgrounds or cultures.

The current study did not carry out any screening of participants’ cognitive ability or language prior to the intervention. Given that CBT is usually viewed as predominantly a language-based therapy, it may be interesting to pre-screen participants prior to the intervention to investigate to what extent (if any) low cognitive ability might be a barrier to accessing CBT and therefore managing emotional regulation. If cognitive ability appears to impact upon the effectiveness of the intervention, this may help to ensure that the additional precautions are taken to ensure that all children can benefit from the intervention. Furthermore, the participants in the current study all attended mainstream schools that had resource provision for children with ASD. It may be useful for future research to consider whether this intervention would be beneficial in mainstream primary schools that do not have resource provisions.

The development of standardised alternative quantitative measures to accurately measure the full extent of emotional regulation would be beneficial in order for emotional regulation to be measured accurately. Alternative measures including behavioural measures and measures of progress would also be beneficial to use alongside improved measures of emotional regulation to measure whether any changes in emotional regulation were linked to changes in other aspects of behaviour or learning. A longitudinal study to investigate the effectiveness of the intervention over time (longer than the two months of the current study) would be
interesting. The current study did not utilise a control or comparison group, and the use of a matched control group would lend strength to any findings.

Due to timescales, the current study gathered teacher and pupil views quantitatively and qualitatively, but parent views were only gathered quantitatively. Further research in this area may aim to gather parent views qualitatively in order to gain a more holistic picture of any effects of the intervention.

Further research may consider using The Homunculi Approach as a group intervention. However, given that children with ASD are a heterogeneous group, and the personalised adaptations necessary for the children involved in this study, it seems that an individual approach would be preferable. This view is supported by Charman et al. (2011) who stated that good practice in autism education goes beyond individualisation of the curriculum and towards a ‘unique autism curriculum’.

5.7.3 Implications for practice.

This small, exploratory case study produced important findings that may be important to practitioners supporting children with ASD and the services that they work within. Implications for LAs, EPs and schools will now be discussed in turn.

5.7.3.1 Implications for Local Authorities.

Inclusion is a key factor within the current political context and has been for many years. Rooted in the concept of equality, the term inclusion refers to the rights of children to be active within their communities, and to be able to participate and achieve alongside their peers. Many legislative guidelines including the Salamanca Framework (1994) encourage local authorities to promote inclusion of all children. Munro (2011) suggests that LAs should ensure that they provide the correct and sufficient services for meeting the needs of children. The term ‘services’ here can be interpreted to include skilled practitioners who can utilise therapeutic techniques in educational settings. As stated by Rotheram-Fuller and MacMullen
(2011) and Bond et al. (2015), it is important that children who need it receive therapeutic interventions within their educational setting. Due to the concerns of LAs regarding the emotional regulation skills and behaviour of children with ASD in mainstream schools (Ashburner et al. 2010) the current research and any future research in this particular area may be supportive in providing LAs and the services within them with information regarding the suitability of the Homunculi intervention for use with this group of children.

5.7.3.2 Implications for Educational Psychologists.

Mackay (2008) states that educational psychologists are a key therapeutic resource for children and young people, and due to the increase in a wide range of mental health problems in childhood and the need for expert individual work with such children, there is a rising commitment to therapy within the EP profession. This research provides some evidence that may impact upon the practice of EPs who are reported to use therapeutic techniques regularly (Atkinson et al. 2011). This study suggests that in-school CBT using The Homunculi Approach personalised to the individual child may help children in year 4 or 5 with ASD to regulate their emotions more successfully and builds upon existing research using the Homunculi intervention (Greig & Mackay, 2005; Mackay & Greig, 2008), and may be useful to inform the work of EPs utilising CBT or supporting children with ASD. Furthermore, this study may encourage EPs to use this intervention with children with language difficulties due to the lesser demand on language than other therapeutic modalities. The intervention in the current study included weekly one-hour sessions over a period of five weeks and provides promise of the efficacy of the intervention over this time frame. Given the changing contexts of educational psychology services with the move towards traded services, brief therapeutic interventions to support children may be preferable to provide support for children who may benefit from therapeutic support but who do not reach criteria for services such as CAMHS. EPs as caseworkers rather than therapists have the added benefit of an understanding of contexts and, following the implementation of interventions, the ability to provide ongoing monitoring and liaison with staff regarding the
effectiveness of interventions and how to provide strategies to provide appropriate contexts for newly learned skills to be generalised, supported and maintained, and in addition to this, EPs are often able to monitor the effects of interventions for children and to provide further support as and when necessary to build upon skills. Additionally, EPs have the skills and knowledge to support paraprofessionals to implement this intervention successfully through providing training and supervision to enhance competence.

5.7.3.3 Implications for schools.

There are some implications for schools arising from the current study. The Homunculi Approach is designed to enable those without training in CBT or ASD to deliver the programme, although the findings from the current study suggest that specialist knowledge of ASD and CBT is beneficial to implementing the programme successfully and this provides opportunities for schools to provide training and supervision for facilitators, if the programme is to be used by teachers or paraprofessionals. Communication between programme facilitator and class teachers will be key to enabling strategies to be mainstreamed. Furthermore, a point for consideration that arose in relation to Arthur is that school staff may need support in developing high expectations for children with ASD. It appeared that Arthur’s teacher may have had limited expectations to a certain extent relating to the potential progress that he may be able to make in the future and it is possible that this may need reframing in relation to future work with schools.

Humphreys (2008) suggests that children with ASD are 20 times more likely to be excluded from school than those without SEN and according to Barnard et al. (2000) one of the most common reasons for the exclusion of children with ASD was due to maladaptive behaviour. If further research into the use of this intervention proves beneficial, there could be a role here for EPs and potentially school staff in supporting children with ASD to improve their behaviour through addressing emotional regulation difficulties, and consequently it is possible that exclusions may reduce. Furthermore, inclusion may be enhanced further by improving access to
the curriculum for children with ASD as data from two of the cases of the present study suggested that access to the curriculum was enhanced post-intervention.

5.7.3.4 Implications for the Homunculi Intervention.

The Homunculi is an engaging and interactive intervention which appeared to support the pupils’ metacognitive and perspective-taking skills and during the intervention phase, all three children appeared to enjoy the sessions. As highlighted by Oliver (2014), the evidence base is tentative for The Homunculi Approach. This study is, to the researcher’s knowledge, the first independent study to explore the use of Homunculi Approach with children with ASD. It is acknowledged that a very specific area is explored in the current study (emotional regulation) and that it carries the limitations of case study research but the findings suggest that the intervention has potential for use with children with ASD and that further research is warranted.

According to Menzies (2014), the Homunculi programme may be too time-intensive for many EPs. The current study reduces the intervention to an hour a week for five weeks and suggests that some positive effects may be gained when used with children with ASD in a mainstream setting where the teachers have knowledge of how to support children with ASD. The intervention suggests that parents, paraprofessionals, teachers could implement the programme. The researcher concurs with Menzies (2014) who suggested that it may be difficult for people without a significant understanding of ASD to implement the programme successfully without adequate supervision, and extends this to suggest that perhaps a knowledge and understanding of the principles of CBT would also be a necessary prerequisite to implementing it successfully. In the current study, a knowledge and understanding of the needs of children with ASD was paramount, particularly in relation to Arthur, for whom it was particularly important that time limits were adhered to. The intervention may have potentially been inaccessible to him if this was not understood and responded to appropriately by the researcher. Those with a lesser understanding of ASD and a lesser ability to notice and adjust whilst remaining true to the intervention may have found it more difficult to respond
flexibly to enable Arthur (or others like him) to access the learning opportunities available to him during the intervention. Furthermore, in the current study, knowledge and expertise relating to CBT was necessary in order to develop the intervention based upon The Homunculi Approach as explained in table 8 in section 3.10. In line with Menzies (2014), it seems that a knowledge and understanding of the principles of CBT would be necessary to support the programme to be implemented successfully.

Educational psychologists are in an ideal position to provide training (to enhance competence) and supervision to other professionals who may wish to implement the intervention. Additionally, educational psychologists can guide other professionals when deciding whether children have the necessary skills to access a CBT programme (for example, ability to identify emotions).

5.8 Conclusion

This exploratory case study has begun to address a gap in the literature regarding the use of CBT with children with ASD to support emotional regulation skills, and has yielded some mixed but potentially promising findings regarding the effectiveness of the personalised Homunculi intervention in supporting emotional regulation skills of three year four and year five pupils with ASD in mainstream primary schools with resource provision. This is indicated by the thematic analysis of semi-structured interviews alongside quantitative data gained from the Emotional Literacy Checklists (Faupel, 2003). This study has demonstrated that some small changes were maintained over time, and while it was recognised that all three pupils involved in the study still had areas for development relating to emotional regulation, positive effects had been noticed in relation to participants’ behaviour, wellbeing and ability to access learning. Specific strategies from the intervention, for example the development of gadgets, appeared to be useful to the children, and good classroom practice appeared to be a supportive factor in enabling participants to develop some aspects of their emotional regulation skills yet provide them with the support that they still required at times to regulate their emotions successfully. Adaptations to the programme were felt necessary by the
researcher through noticing and adjusting, to enable the participants to access the intervention successfully. Future directions for research have been discussed including larger scale and replication studies in order to fully ascertain the potential effectiveness of the intervention for children with ASD to support emotional regulation skills.

It is hoped that EPs will find the current research project relevant to their work in supporting children with ASD and that further research in this area will be promoted in order to investigate further the effectiveness of using CBT with children with ASD and emotional regulation difficulties.
REFERENCES


Health and Care Professionals Council (2012). *Standards of conduct, performance and ethics*. London: HCPC.


## Appendix 1 - Inclusion and Exclusion Criteria, Literature Review

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Appendix 2- Excluded studies

This appendix provides references for those studies not included in the systematic literature search. It is organised in terms of the reason for exclusion.

Excluded: Books/ book chapters

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**Excluded: Studies not using solely CBT as an intervention with children with ASD**

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<td>Autism: Diagnosis after first infancy</td>
</tr>
<tr>
<td>Petermann &amp; Petermann</td>
<td>2012</td>
<td>Intensive behavioural therapy</td>
</tr>
<tr>
<td>Rivard, Paquet &amp; Mainville</td>
<td>2011</td>
<td>Cognitive behavioural therapy for anxiety in children and adolescents with autistic spectrum disorders</td>
</tr>
<tr>
<td>Soussana, Sunyer, Pry &amp; Baghdadli</td>
<td>2012</td>
<td>Anxiety in children and adolescents with Pervasive Developmental Disorder without mental retardation: Review of the literature</td>
</tr>
</tbody>
</table>

### Excluded: Dissertation abstracts

<table>
<thead>
<tr>
<th>Authors</th>
<th>Date</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author</td>
<td>Year</td>
<td>Title</td>
</tr>
<tr>
<td>-----------------</td>
<td>------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Drahota</td>
<td>2009</td>
<td>Intervening with independent daily living skills for high functioning autism and concurrent anxiety disorder</td>
</tr>
<tr>
<td>Horowitz</td>
<td>2004</td>
<td>The mediating effects of perceptions and coping strategies between personal resources and emotional wellbeing: A study of mothers of children with autism</td>
</tr>
<tr>
<td>Koning</td>
<td>2011</td>
<td>Efficacy of CBT-based social skills intervention for school aged boys with autistic spectrum disorder</td>
</tr>
<tr>
<td>Lickel</td>
<td>2011</td>
<td>Assessment of prerequisite skills for cognitive behavioural therapy for children with high functioning autism and anxiety</td>
</tr>
<tr>
<td>McNally-Keehn</td>
<td>2011</td>
<td>Effectiveness of CBT for children with high functioning autism and anxiety</td>
</tr>
<tr>
<td>Snell</td>
<td>2012</td>
<td>Group therapy for children and adolescents with autistic spectrum disorders</td>
</tr>
</tbody>
</table>
Appendix 3: Quality of methodology evaluative criteria, in line with that suggested by Spencer et. al., 2003

<table>
<thead>
<tr>
<th>Quality of methodology - Quantitative</th>
<th>Quality of methodology - Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Randomised allocation of participants</td>
<td>Appropriateness of research design</td>
</tr>
<tr>
<td>Focus on a specific well-defined issue</td>
<td>Sampling rationale</td>
</tr>
<tr>
<td>Intervention compared with treatment-as-usual, placebo or control group</td>
<td>Data collection well executed</td>
</tr>
<tr>
<td>Use of manuals/protocols/procedures for monitoring and fidelity checks</td>
<td>Analysis close to data</td>
</tr>
<tr>
<td>Reliability and validity of one outcome measure are indicated</td>
<td>Emergent theory relates to problem investigated</td>
</tr>
<tr>
<td>Reliability and validity of more than one outcome measure are indicated</td>
<td>Explicit reflexivity</td>
</tr>
<tr>
<td>Sample size is large enough to detect effect size (Cohen, 1992).</td>
<td>Comprehensive documentation</td>
</tr>
<tr>
<td></td>
<td>Negative case analysis</td>
</tr>
<tr>
<td></td>
<td>Clear and coherent reporting</td>
</tr>
<tr>
<td></td>
<td>Researcher-participant co-construction</td>
</tr>
<tr>
<td></td>
<td>Transferability of conclusions considreated</td>
</tr>
<tr>
<td></td>
<td>Evidence of attention to ethical issues</td>
</tr>
</tbody>
</table>

0-2 = low
3-4 = medium
5-7 = high

0-4 = low
5-8 = medium
9-12 = high

For studies generating quantitative data, quantitative evaluation criteria were used.
For studies generating qualitative data, qualitative evaluation criteria were used.
For mixed methods studies, both sets of criteria were used.

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**Appendix 4: Faupel (2003) Emotional Literacy Checklist norm-referenced cut-off points**

**Teacher checklist: cut-offs for score bands for the overall emotional literacy score and subscale scores (from Faupel, 2003)**

<table>
<thead>
<tr>
<th>Score band</th>
<th>Description</th>
<th>Overall</th>
<th>Self-awareness</th>
<th>Self-regulation</th>
<th>Motivation</th>
<th>Empathy</th>
<th>Social skills</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td>Well below average</td>
<td>42 or below</td>
<td>8 or below</td>
<td>6 or below</td>
<td>6 or below</td>
<td>8 or below</td>
<td>9 or below</td>
</tr>
<tr>
<td><strong>2</strong></td>
<td>Below average</td>
<td>43-50</td>
<td>9-10</td>
<td>7-8</td>
<td>7-8</td>
<td>9-10</td>
<td>10-11</td>
</tr>
<tr>
<td><strong>3</strong></td>
<td>Average</td>
<td>51-69</td>
<td>11-13</td>
<td>9-14</td>
<td>9-13</td>
<td>11-14</td>
<td>12-14</td>
</tr>
<tr>
<td><strong>4</strong></td>
<td>Above average</td>
<td>70-75</td>
<td>14</td>
<td>15</td>
<td>14-15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td><strong>5</strong></td>
<td>Well above average</td>
<td>76 or above</td>
<td>15-16</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>
Parent checklist: cut-offs for score bands for the overall emotional literacy score and subscale scores (from Faupel, 2003)

<table>
<thead>
<tr>
<th>Score band</th>
<th>Description</th>
<th>Score ranges for overall emotional literacy and subscale scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Overall</td>
<td>Self-awareness</td>
</tr>
<tr>
<td>1</td>
<td>Well below average</td>
<td>60 or below</td>
</tr>
<tr>
<td>2</td>
<td>Below average</td>
<td>61-67</td>
</tr>
<tr>
<td>3</td>
<td>Average</td>
<td>68-880</td>
</tr>
<tr>
<td>4</td>
<td>Above average</td>
<td>81-86</td>
</tr>
<tr>
<td>5</td>
<td>Well above average</td>
<td>87 or above</td>
</tr>
</tbody>
</table>
Pupil checklist: cut offs for score bands for the overall emotional literacy score
(from Faupel, 2003)

<table>
<thead>
<tr>
<th>Score band</th>
<th>Description</th>
<th>Score range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Well below average</td>
<td>62 or below</td>
</tr>
<tr>
<td>2</td>
<td>Below average</td>
<td>63-68</td>
</tr>
<tr>
<td>3</td>
<td>Average</td>
<td>69-81</td>
</tr>
<tr>
<td>4</td>
<td>Above average</td>
<td>82-87</td>
</tr>
<tr>
<td>5</td>
<td>Well above average</td>
<td>88 or above</td>
</tr>
</tbody>
</table>
### Appendix 5: Researcher diary format

<table>
<thead>
<tr>
<th>Pupil engagement</th>
<th>Observations</th>
<th>Evaluations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pupil response</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pupil comments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response to</td>
<td></td>
<td></td>
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<tr>
<td>materials/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>activities</td>
<td></td>
<td></td>
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<tr>
<td>Logistics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adaptations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>necessary</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 6: Outline/ description of thematic analysis process (Braun & Clarke, 2006)

Phase 1: Transcribing data

- Interviews transcribed into a Microsoft Word document
- All names anonymised throughout transcriptions

Phase 2: Generating initial codes

- Each transcript manually coded. Firstly, salient parts of the transcription were identified and then relevant codes written onto post-it notes and stuck onto the paper in the appropriate place, enabling efficient organisation, checking and movement of codes as necessary. This is illustrated in the photograph below:

Phase 3: Searching for themes

- Codes were sorted and merged into potential themes
- A visual representation of the data was created using post-it notes
- This is illustrated in the photograph below:
Phase 4: Reviewing themes

- Researcher reviewed and refined themes
- Ensured themes were relevant in relation to both the level of coded data and the level of the entire data set

Phase 5: Defining and naming themes

- Names were generated for each theme which accurately represented the essence of each theme

Phase 6: Producing the report

- The analytic narrative was weaved together with data extracts to illustrate a coherent story about the data
Appendix 7: Ethical Approval

Dear Emma

Ref: PGR-7038622-A1

Title: Can personalised, individual, in-school cognitive behavioural therapy aid
emotional regulation in primary aged children with autistic spectrum disorder?

I am pleased to confirm that your ethics application has now been approved by the School Research Integrity Committee (RIC) against a pre-approved UREC template.

If anything untoward happens during your research then please ensure you make your supervisor aware who can then raise it with the RIC on your behalf.

This approval is only for the Ethical Approval Application, you are still required to have received approval from your Panel before carrying out any research.

Regards

Gail

Gail Divall | Senior Programmes Administrator

School of Environment, Education and Development | The University of Manchester | Arthur Lewis Building 2.020 | Oxford Road | Manchester M13 9PL | UK

Tel: +44(0)161 275 0317

Intranet:
http://www.seed.manchester.ac.uk/studentintranet/miestudenthome/integrityethics/

For information on ethical research within the University, please refer to
www.researchsupport.manchester.ac.uk/Goverance/Ethics
Can personalised, individual, in-school cognitive behavioural therapy aid emotional regulation in primary aged children with autistic spectrum disorder?

Participant Information Sheet - Parents

You are being invited to take part in a research study as part of a thesis for a Doctorate in Educational and Child Psychology. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

Who will conduct the research?

Emma Downing
School of Education
Ellen Wilkinson Building
The University of Manchester
Oxford Road
Manchester.

Title of the Research

Can personalised, individual, in-school cognitive behavioural therapy aid emotional regulation in primary aged children with autistic spectrum disorder?

What is the aim of the research?

The aim of this research is to see if individualised cognitive behavioural therapy (CBT) carried out in school can help children with ASD to regulate their emotions more effectively.

Why have I been chosen?

Your child has been identified by the school as a potential participant because he or she has a diagnosis of Autistic Spectrum Disorder (ASD) and may benefit from learning new skills of how to regulate or control his or her emotions more easily. This research is designed to see if CBT can help children with ASD to do this effectively.
What would I be asked to do if I took part?

If you did decide to take part, 5 sessions of CBT would be designed to address the needs of your child in relation to their emotional regulation skills. The CBT sessions would be carried out for up to one hour per week in school (during the school day), and your child may be given some tasks to complete outside of sessions. Sessions would include tasks, games and challenges to help your child differentiate between thoughts, feelings and behaviour, and to find ways to help them to control their emotions more effectively. Before and after the sessions, you, your child and your child’s teacher will be given rating scales to complete, regarding your child’s current level of skills relating to emotional regulation. 2 months after the sessions have been completed, your child will be interviewed, as well as your child’s teacher to gather views on how effective the sessions had been for your child. The scales would be completed again, to see if any change that may have occurred is long lasting.

What happens to the data collected?

All name details in the data collected will be anonymised in order to maintain confidentiality. Rating scales will be analysed to see if there is any change in terms of your child’s level of emotional regulation during the study. Interviews will be recorded and the researcher will transcribe this in order to look in detail at what was said relating to views about your child’s emotional regulation skills and if the CBT has had any effect on this.

How is confidentiality maintained?

Interview recordings will only be kept as long as necessary and the data on them will be destroyed. Any written records will be anonymised- all name details including people, schools and local authorities will be changed.

What happens if I do not want my child to take part or if I change my mind?

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time without giving a reason.

Will my child be paid for participating in the research?

There will be no payment for participating in this research.

What is the duration of the research?

5 x 1 hour sessions of individualised CBT, completion of rating scales, 1 x 30 minute interviews (two months after the sessions to see if any change is maintained).

Where will the research be conducted?

In your child’s school, during the school day.

Will the outcomes of the research be published?
The research will be assessed as part of the researcher’s professional doctorate. There is a possibility that it may also be published in a scientific journal: if this is the case then your consent will be sought.

**Criminal Records Check**

The researcher has a fully enhanced CRB disclosure and can therefore conduct research on school premises.

**Contact for further information**

**Researcher:**

*Emma Downing*

Email: emma.downing@postgrad.manchester.ac.uk  
Telephone: 0161 275 3511 (Please leave a message with Jackie Chisnall, Programme Secretary)

**Supervisor:**

*Caroline Bond*  
Telephone: 0161 275 3511 (Please leave a message with Jackie Chisnall, Programme Secretary)

**What if something goes wrong?**

If there are any issues regarding this research that you would prefer not to discuss with members of the research team, please contact the Research Practice and Governance Co-ordinator by either writing to 'The Research Practice and Governance Co-ordinator, Research Office, Christie Building, The University of Manchester, Oxford Road, Manchester M13 9PL', by emailing: Research-Governance@manchester.ac.uk, or by telephoning 0161 275 7583 or 275 8093
Can personalised, individual, in-school cognitive behavioural therapy aid emotional regulation in primary aged children with autistic spectrum disorder?

CONSENT FORM

If you are happy to participate please complete and sign the consent form below

1. I confirm that I have read the attached information sheet on the above study and have had the opportunity to consider the information and ask questions and had these answered satisfactorily.

2. I understand that my child’s participation in the study is voluntary and that I am free to withdraw at any time without giving a reason.

3. I understand that the interviews will be audio-recorded

4. I agree to the use of anonymous quotes

5. I agree that any data collected may be passed to other researchers

6. I agree that any data collected may be published in anonymous form in academic books or journals.

I agree to take part in the above project

<table>
<thead>
<tr>
<th>Name of participant</th>
<th>Date</th>
<th>Signature</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Name of person taking consent</th>
<th>Date</th>
<th>Signature</th>
</tr>
</thead>
</table>
Can personalised, individual, in-school cognitive behavioural therapy aid emotional regulation in primary aged children with autistic spectrum disorder?

Participant Information Sheet for School Staff

You are being invited to take part in a research study as part of a thesis for a Doctorate in Educational and Child Psychology. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

Who will conduct the research?

Emma Downing
School of Education
Ellen Wilkinson Building
The University of Manchester
Oxford Road
Manchester.

Title of the Research

Can personalised, individual, in-school cognitive behavioural therapy aid emotional regulation in primary aged children with autistic spectrum disorder?

What is the aim of the research?

The aim of this research is to see if individualised cognitive behavioural therapy (CBT) carried out in school can help children with ASD to regulate their emotions more effectively.

Why have I been chosen?

A child in your school has been identified by the school as a potential participant because he or she has a diagnosis of Autistic Spectrum Disorder (ASD) and may benefit from learning new skills of how to regulate or control his or her emotions more easily. This research is designed to see if CBT can help children with ASD to do this effectively. You have been identified because you know the child very well and have a good relationship with him/her.

What would I be asked to do if I took part?
If you did decide to take part, you would be asked to complete rating scales giving your view of the child’s emotional regulation skills immediately before the CBT sessions, immediately after the CBT is completed and again 2 months later. You would also be asked to participate in a 20 minute semi-structured interview 2 months after the CBT is completed.

What happens to the data collected?

All name details in the data collected will be anonymised in order to maintain confidentiality. Rating scales will be analysed to see if there is any change in terms of the child’s level of emotional regulation during the study. Interviews will be recorded and the researcher will transcribe this in order to look in detail at what was said relating to views about the child’s emotional regulation skills and if the CBT has had any effect on this.

How is confidentiality maintained?

Interview recordings will only be kept as long as necessary and the data on them will be destroyed. Any written records will be anonymised- all name details including people, schools and local authorities will be changed.

What happens if I do not want to take part or if I change my mind?

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time without giving a reason.

Will I be paid for participating in the research?

There will be no payment for participating in this research.

What is the duration of the research?

Completion of rating scales, 1 x 30 minute interview

Where will the research be conducted?

In your school, during the school day.

Will the outcomes of the research be published?

The research will be assessed as part of the researcher’s professional doctorate. There is a possibility that it may also be published in a scientific journal: if this is the case then your consent will be sought.

Criminal Records Check

The researcher has a fully enhanced CRB disclosure and can therefore conduct research on school premises.

Contact for further information
Researcher:

Emma Downing

Email: emma.downing@postgrad.manchester.ac.uk

Telephone: 0161 275 3511 (Please leave a message with Jackie Chisnall, Programme Secretary)

Supervisor:

Caroline Bond

Telephone: 0161 275 3511 (Please leave a message with Jackie Chisnall, Programme Secretary)

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Can personalised, individual, in-school cognitive behavioural therapy aid emotional regulation in primary aged children with autistic spectrum disorder?

CONSENT FORM

If you are happy to participate please complete and sign the consent form below

1. I confirm that I have read the attached information sheet on the above study and have had the opportunity to consider the information and ask questions and have these answered satisfactorily.

2. I understand that my participation in the study is voluntary and that I am free to withdraw at any time without giving a reason.

3. I understand that the interviews will be audio-recorded

4. I agree to the use of anonymous quotes

5. I agree that any data collected may be passed to other researchers

6. I agree that any data collected may be published in anonymous form in academic books or journals.

I agree to take part in the above project

Name of participant __________________________ Date __________________________ Signature __________________________

Name of person taking consent __________________________ Date __________________________ Signature __________________________
Appendix 9: Pupil Assent Form

Emma would like to work with me to see if we can find ways to help me feel a little better when things get tricky.

We will work together on some activities to see if we can learn any new skills that might be able to help me when things get tricky. Emma might ask me to see if I can try some of the new skills out either in class or at home.

Emma will come to school to work with me once a week for 5 weeks. We could make a cartoon strip using our own cartoon characters.

Emma will write about the activities that we do and if they help me or not.

If I do not want to do this, I do not have to. If I am unsure I can speak to Emma, or speak to my teacher.
Appendix 10: Interview Schedules

Staff semi-structured interview

Warm up

- Thank participant for agreeing to be interviewed
- Recap purpose of research: to see whether intervention is successful in supporting children with ASD to develop emotional regulation skills and to see if any adaptations were necessary to enable them to fully access it
- Emphasise the importance of honest answers
- Inform participant that interview will take around 20 minutes
- Inform about recording and transcription process, and that all audio information will be deleted

1. Have you noticed any changes in the child’s emotional regulation skills in the last couple of months? Since participating in this research? What kind of changes have you noticed? Would you say that his/her emotional regulation has changed in comparison with how it was before participating in the intervention?

2. Have these changes had an impact upon the child’s ability to control his or her behaviour? In what ways?

3. Has this had any effect on the child as a person? Has it affected the child in school?

Ask if there is anything else they wish to talk about regarding the research

Thank participant for being interviewed
Child semi-structured interview

Warm up
- Thank participant for agreeing to be interviewed
- Explain purpose of interview: to see whether The Homunculi has been helpful or not for them, and what they found helpful
- Emphasise the importance of honest answers- emphasise that their views are VERY IMPORTANT and that there is no right or wrong answer
- Inform participant that interview will take around 15 minutes and what will happen after interview (e.g. researcher will take child back to class/ TA will come and meet child etc)
- Inform about recording and transcription process, and that all audio information will be deleted

At times it may be necessary to help children to begin sentences (provide sentence starters) in order to support them to convey their ideas, or to give them a selection of answers to choose from to enable them to express their views. This will be done sensitively and appropriately in order to avoid confounding the views that the children express.

- Do you think your ability to control your emotions has changed recently? If so, in what ways do you think it has changed? What is different? What is still the same? Since when has it changed?

- Has this affected you? Affected you in school/ at home? How? Has things changed since participating in this study? In what ways?

- What did you think about our sessions? Were any parts helpful/ unhelpful?

Ask participant if there is anything else they would like to say.
Thank participant.