

**SELF-EFFICACY AND COLLECTIVE EFFICACY
BELIEFS OF TEACHERS OF PUPILS WITH
AUTISM IN THE UK**

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Philosophy

by
Evangelia Dimopoulou

College of Business, Arts and Social Sciences
Department of Education
Brunel University
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Abstract

A considerable number of children with autism in the UK display complex learning needs and present challenges to teachers who struggle to meet their educational needs. Teacher effectiveness as well as pupils' achievement has been linked to self-efficacy and collective efficacy. These constructs have been explored in mainstream education but less so in special education.

The purpose of this thesis was to explore the beliefs of teachers in their own capabilities when teaching children with autism [their self-efficacy] and beliefs in the capabilities of their teams [collective efficacy] to produce outcomes for their students with autism. This research sought to explore whether demographic characteristics are related to self-efficacy and collective efficacy and to seek the teachers' views on factors that may influence their self and collective efficacy.

This thesis followed a mixed methods approach. It took place in two phases. The first (quantitative) phase investigated relationships between the two constructs and demographic information. The second (qualitative), phase explored the issues further through semi-structured interviews. Twenty-four teachers of pupils with autism, from five schools in the area of Greater London graded as outstanding by Ofsted were interviewed. The schools were educating children with autism. The interviews were analysed using thematic analysis.

The findings demonstrated that self-efficacy and collective efficacy beliefs are higher in schools graded as outstanding by Ofsted (Office for Standards in Education). Training, experience, vicarious learning, support by leaders and verbal persuasion had a positive influence on teachers' self-efficacy. The children's behaviour and special educational needs affected teachers' self-efficacy as well as teachers' emotional states. Pupil progress was attributed more to collaboration and collective efficacy than self-efficacy.

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Στους γονείς μου, Μαρία και Χρήστο...Τι να πω...Με αφήσατε να επιλέξω ποια θέλω να είμαι και τι θέλω να κάνω. Περάσατε δυσκολίες για να μπορώ να πραγματοποιήσω τα όνειρά μου. Ξέρω ότι δεν μπορώ να γυρίσω πίσω τον χρόνο και να επανορθώσω για όλα τα χρόνια που δεν ήμουν εκεί άλλα σας αφιερώνω αυτό με απέραντη αγάπη και ευγνωμοσύνη και την ελπίδα ότι σας έκανα περήφανους.

Μαμά, μπαμπά, ΕΥΧΑΡΙΣΤΩ....

Chapter 1 - Introduction

This chapter outlines the purpose and structure of the research. It provides a brief summary of the content and the purpose of this research and presents the current landscape and the reasons that led me to pursue this study. In this chapter, I present the philosophical approach, the research questions and my journey to explore them. The chapter ends with summary of each of the following chapters.

1. 1 Description of the study

This study explores the self-efficacy and collective efficacy beliefs of teachers of pupils with autism in the UK. The purpose is to examine a sample of teachers' beliefs in their own capabilities of teaching children with autism, their self-efficacy, and their beliefs in the capabilities of their teams, their collective efficacy, to produce outcomes for their students with autism. This study is important in contributing to theory and practice. It extends the existing literature on self and collective efficacy of teachers and also explores the implications of self and collective efficacy in teachers' professional practice, particularly teachers of pupils with autism.

The theoretical basis of this study is Bandura's Social Cognitive theory (1977a), extended by Bandura in the mid-1980s in order to explain how humans behave, and individuals develop, which is interlinked with their self and the influences they receive from the environment. In order for Bandura to explain this two-way relationship between individuals and their environment, and the ways it affects behaviour, he used a model of causation involving triadic reciprocal determinism. In this model of reciprocal causation, behaviour, cognition, other personal factors and environmental influences all operate as interacting determinants that influence each other bi-directionally (Bandura, 1989).

Social cognitive theory led to the development of self-efficacy theory. Bandura (1993) suggested that what teachers do and say in their classrooms is regulated and defined by the perceptions teachers have of themselves as individuals and of their

personal and pedagogical abilities. He also argued that teachers' beliefs in their ability to motivate and promote learning affect the types of learning environments they create and the level of academic progress their students achieve. Pajares (2002) saw people's beliefs in their own accomplishments as more instrumental in deciding how to behave than their beliefs in their knowledge or skills.

Bandura (1997a:469) defined collective efficacy as 'performance capability of a social system as a whole and to people's shared beliefs that they can work together to produce effects Bandura (1997a) supported the concept of collective efficacy as similar to self-efficacy in that it focuses on the amount of effort and persistence dedicated to a task, and the perception of the success of that task and is likely related to self-efficacy, since the perceived sense of group efficacy is related to the individual perceived efficacy of the members of the group.

Teachers play an increasingly prominent role in many aspects of the care and management as well as the education of their pupils (Howlin, 1998). What is important about teachers' self-efficacy is that it is positively linked to student achievement (Goddard & Skrla, 2006; Klassen & Tze, 2014; Ross, 1994; Woolfolk & Hoy, 1993). Bandura (1994) also demonstrated a positive of between collective efficacy on student achievement.

Both teachers' self-efficacy and collective efficacy have been rarely explored in teachers of pupils with autism and there are only a handful of documented studies in the literature. Teachers' collective efficacy has been examined less frequently in (Pajares, 1997) and even less for special education teachers. Few studies have examined the impact of collective efficacy on student achievement (Viel-Ruma *et al.*, 2010. It has indeed been deemed a "neglected construct" (Goddard, 2001:467). Whilst there is an amount of evidence relating to self and collective efficacy and achievement in mainstream education, there is no evidence linking those variables with regard to teachers of pupils with autism, which is one of the aspects that this study explores. This is an important addition to the existing literature considering

that the achievement of pupils with special needs, and autism in particular, is viewed and measured differently from that of their typically developing peers. This is because of the different assessment tools used by schools to measure progress for children with special needs and those with severe learning needs in particular.

The study took place over a number of years and I followed a mixed methodology. I first conducted a survey to measure the self-efficacy and collective efficacy beliefs of a sample of teachers and looked at these in relation to demographic details. I sent questionnaires to schools around the UK and most responses came from the Greater London area and the Midlands. I approached schools exclusively for children with autism and schools with units for children with autism.

In the first phase of the study, the quantitative phase, I wanted to explore the levels of self and collective efficacy, explore relationships between those constructs and also relate those to demographic factors. As it was difficult to predict what types of information gleaned through this process would be the most useful, I intentionally designed this initial phase of research to retain significant flexibility, both in the scope and focus of the areas of efficacy that would be explored and analysed. This phase therefore had a scoping character, highlighting the issues that I then decided warranted further exploration. Much like the refraction of light through a lens, the analysis of this data yielded a more focused, brighter field of issues that warranted analysis. Based upon this focus, I conducted qualitative interviews to explore the identified issues in more depth. Specifically, I wanted to talk to the teachers, in order to more thoroughly understand and evaluate their thoughts regarding self-efficacy and collective efficacy including, but not limited to, the impact of those theories on their individual beliefs about their capabilities. As this qualitative, “focused” component of the research yielded the most relevant material, as well as the most in-depth and worthwhile material, it grew into the lion’s share of the research. Throughout the process, it became apparent that the highest beneficial time-to-data ratio was linked to exploring self-efficacy.

The results of this study provide insight regarding current literature of the self and collective efficacy of teachers of pupils with autism. The richness of data in the qualitative phase provides new dimensions to the efficacy of teachers. This study also provides information for reflection on teachers' own practice and the aim of providing perspective and knowledge to the relevant educational community.

1.2 Theoretical background

1.2.1 Autism

Autism is a pervasive neuro-developmental disorder that permanently affects how an individual experiences and interacts with their surroundings. Autism has been defined as a condition since Leo Kanner (1943) first described a number of features that identify children with this disorder. Based on his work on the observation of 11 children who seemed to exhibit some similarities related to a psychiatric disorder that had not been identified until then, he observed that those children were uniquely independent and had difficulty relating to others. They demonstrated what Kanner (1943:242) called an "extreme autistic aloneness". Even though his sample was quite restricted in number, the presentation of his findings was to be the cornerstone for the introduction of the term 'autism' in the psychiatric, educational, vocational and other fields of science. He described the defining features of autism as: profound autistic withdrawal, obsessive desire for the preservation of sameness, good rote memory, intelligent and pensive expression, mutism, or language without real communicative intent, over-sensitivity to stimuli and a skilful relationship to objects.

Research by Rutter (1978, 1990), Newson (1977), Wing (1988, 1996) and others has helped in the configuration of diagnostic criteria and in determining autism as "extensive disturbance of growth" that is presented before the third year of life of a child (Vogindroukas et. al, 2003). Even if small differences exist in the way of classification of symptoms amongst the researchers, all agree that autism affects the growth of children in three basic areas, a) sociability, b) communication and c) social imagination and thinking. Abnormalities in social and emotional development

associated with Autistic Spectrum Disorder (ASD) typically include difficulty in forming and maintaining relationships, inappropriate attempts to interact with others, difficulty recognising and responding appropriately to how other people are feeling and a preference for not sharing enjoyment with other people. Specific impairments in areas of neuropsychological functioning are also associated with ASD, notably weak central coherence (Happé & Frith, 2006) and poor executive functioning (Ozonoff, 1997).

The term ASD (Autistic Spectrum Disorder) refers to a spectrum of disorders. The severity of autism varies widely, from mild to severe (Kanner, 1943). Wing (1989), whose theory of spectrum attempted to show that there are no well-defined limits in autism, and that autism has gradations (soft, mediocre?, severe) and children with autism do not assemble all the classic characteristics of autism as those described by Kanner. The diagnostic criteria of Wing were named "the triad of impairments of social interaction' and in these are included: 1. Impairment in social relations, 2. Impairment in social communication 3. Impairment of social comprehension and imagination. The diagnostic framework for autism has changed in the revised edition of the American Psychiatric Association's Diagnostic and Statistical Manual (DSM), published in May 2013 (DSM-V, APA, 2013). There is a dramatic change in this new diagnostic framework of autism moving from a 'triad' to a 'dyad' of impairments encompassing two domains of impairment in 'social communication and interaction' and 'restricted, repetitive patterns of behaviour, interests or activities' (DSM-V, APA, 2013).

Autism is prevalent within a considerable percentage of children worldwide. According to the National Autistic Society (NAS) (2014) 1 out of every 100 children in the UK was diagnosed with Autistic Spectrum Disorders (ASD). The impairments in the ability to communicate and the ways that this deficit can be enhanced? have driven a substantial amount of research. The number of pupils with autistic spectrum disorders who receive their education in mainstream schools in the UK has increased considerably over the last ten years (Emam & Farrel, 2009). Taylor *et al.* (2013)

found that annual prevalence rates for each year were steady at approximately 3.8/1000 boys and 0.8/1000 girls. Annual incidence rates each year were also steady at about 1.2/1000 boys and 0.2/1000 girls. They reported that following a five-fold increase in the annual incidence rates of autism during the 1990s in the UK, the incidence and prevalence rates in 8-year-old children reached a plateau in the early 2000s and remained steady up to 2010.

There are a variety of approaches and strategies that have been developed to address the range of social, language, sensory, and behavioural difficulties for children and young people with autism. Some of the most widely used approaches are Applied Behavioural Analysis (ABA) (Lovaas, 1987), Treatment and Education of Autistic and Related (TEACCH) (Schopler & Olley, 1982), Picture Exchange Communication System (PECS) (Bondy & Frost, 1994) and others such as Floor Time, Social Stories, and Sensory integration. In general terms, educational treatments with structured content are agreed to be effective (Frith, 2003). There has been a lack of consensus in the field of special education regarding the uses of evidence-based practices in the past (Jenson *et al.*, 2007). There are schools dedicated to implementing one particular method, usually ABA but for the most part teachers and schools will choose to use strategies which ‘work best’ for their individual children. Along with implementing these practices, measurements to ensure the intervention techniques are used effectively must be in place (Mesibov & Shea, 2011). A number of barriers may explain why scientifically validated interventions are infrequently used in classrooms. One prime example is a lack of training in university preparation (Morrier *et al.*, 2011).

1.2.2 Education system for children with autism in the UK

Children with autism, depending on the severity of their needs, are educated either in mainstream or special schools. Children with autism, following a diagnosis, may receive a Statement of SEN (Special educational Needs) or an Education, Health and Social Care Plan (EHCP). This is issued by the Local Authority within which the child resides, following parental and/or school request (Department for Education,

2015). The Statement is issued after professionals including doctors, speech and language therapists, psychologists etc. have carried out a number of assessments. The Statement is an official document that describes the child's educational and medical needs, their objectives for learning, and stipulates the provision the child should be receiving. Schools have a legal duty to provide what is outlined in the Statement, which is reviewed annually. Schools receive funding to support children with a Statement of SEN. The funding varies based on the profile of the child as well as the Local Authority (LA) not clear. Schools are increasingly required to meet the needs of children with autism from their own budget. Since last year define there has been a movement not the right word to convert the Statements to Education and Health Care Plans. The EHCP will ensure appropriate provision for the child until they are twenty-five, whereas the Statement lasts until they are nineteen years old. The EHCP also aims at making all professionals involved in the child's education and health accountable. Another major change is that now parents or carers may have a say on how their child's funding which comes with the EHCP will be spent (Department for Education, 2015).

According to statistics by the Department for Education (DfE) (January 2015), Autistic Spectrum Disorder is the most common primary need amongst pupils with Statements/ EHC plans. Their data reveals that 24.5% of pupils with a Statement or EHC plan in January 2015 had their primary need recorded as this type (Table 1). There is also an additional 4% with a diagnosis of autism but without a statement/EHCP who are receiving additional support in their schools. These figures suggest that 1 in every 4 children in special schools has autism. The tables below show that there is a staggering 90K+ children with autism currently in the UK education system, with 636 schools predominately for children with autism (Table 2).

STATE-FUNDED PRIMARY, STATE-FUNDED SECONDARY AND SPECIAL SCHOOLS			
NUMBER OF PUPILS BY PRIMARY TYPE OF NEED (5)(6)			
	SEN support (7)	Statement of SEN / EHC plan	All
Autistic Spectrum Disorder	36,530	54,245	90,775

Table 1 – Statistical First release, Type of Need, SEN in the UK, January 2015, DfE

SPECIAL SCHOOLS (1):			
TYPES OF PROVISION FOR WHICH SCHOOLS HAVE BEEN APPROVED (2)			
	Number of state-funded special schools (1)	Number of non-maintained special schools	Total
Autistic Spectrum Disorder	600	36	636

Table 2 – Statistical First release, Provision, SEN in the UK, January 2015, DfE

Schools in England are accountable to the Government for the quality of service they provide for their pupils. The body responsible for ensuring accountability is the Office for Standards in Education (Ofsted), which was set up in September 1992 as a result of the Education (Schools) Act 1992. The Act requires the Chief Inspector for England to keep the Secretary of State informed about: the quality of education provided by schools in England; the educational standards achieved in those schools; whether the financial resources made available to those schools are managed efficiently; the spiritual, moral, social and cultural development of pupils at those schools. Ofsted delegates inspectors who are current or former experienced and trained education professionals to visit schools in order to inspect and judge their provision. Schools are inspected with half a day's notice. Inspectors judge the schools against a set of criteria and publish a report which very much determines their reputation schools and their place in the educational map and market. Ofsted judge schools on five areas; overall effectiveness, effectiveness of leadership and management, personal development, behaviour and welfare of the pupils, quality of teaching learning and assessment and lastly, outcomes for pupils. Ofsted defines four levels of grading school performance; 'outstanding', 'good', 'requires improvement' and 'on special measures' with a clear list of descriptors for each grading. Schools graded as outstanding and good are being inspected on average every 4-5 years whereas schools with the other classifications receive more frequent inspections. Independent schools are also being inspected. The purpose of explaining the school inspection process is because Ofsted data from schools participating in this study were used to compare against self-efficacy and collective efficacy. The judgment serves only as an indication of achievement and it does not provide a detail view of the progress of children with autism. When Ofsted judge achievement they compare

the progress over time for students with SEN with progress of the children with SEN, with similar starting points nationally. This view has received criticism as children with SEN and autism have often complex needs and therefore progress with different pace.

1.2.3 Role of the teacher of children with autism

Teachers job comes with considerable responsibilities in meeting the diverse and at times challenging needs of those children, requiring highly individualised planning, often specialist resources and also very personalised delivery methods. The pedagogy, consequently of teachers with autism, requires a flexible curriculum which is also broad enough to meet the diverse needs of the children. Also, the delivery of such curriculum requires high level of differentiation, team work and also assessment robust enough to value the outcomes of teaching and learning. Simpson *et al.* (2003) reported that the severity and pervasiveness of autism often leads to the teaching and inclusion of this group of pupils being seen as especially complex. Their research also indicated that teachers are well supported and prepared to teach students with autism if this occurs in the context of collaboration with special education teachers and support staff and with other additional resources. There are often a number of professionals involved in the children's education as part of the Education and Health Care Plan (DfE, 2015), such as Speech and Language Therapists, Physiotherapists and Educational Psychologists. Therapists cannot always visit the children very often and it is usually down to the class teams to provide specialist support and to teachers to ensure that the professionals' advice and recommendations are incorporated into their teaching.

Children with ASD often need to receive individual or small group support. They present with particular problems in communication and social interaction; they need additional support to enable them to be included in all aspects of classroom life (Wing, 1996; Jordan *et al.*, 1998). In most classes with children with autism either in mainstream or special education there is additional support available in the form of teaching assistants or learning support assistants as they may be also called. The

level of support depends on the needs of the children. Special schools tend to have smaller classes and with an average of 3:1 child to adult ratio. The level of support that a child with autism receives in school may also be stipulated in their Statement of SEN or EHCP (Education and Health Care Plan). There may be cases when the needs of the child demand one-to-one support or even the support of two adults. Schools often have difficulties providing the right amount of support as a result of changing needs as well as limited budget. NAS (2002) reported that more than one in five schools (22%) with pupils with autism spectrum disorders have no assistants trained in autism. For the pupils with autism spectrum disorder in those schools, this vital support function is being performed by an individual who is unlikely to have the necessary skills and experience to work effectively with them. Even though teachers have the overall responsibility of their students' learning, teaching assistants' support is essential for ensuring that students with such difficulties engage with teaching and stay focussed and on-task (Radford *et al.*, 2014).

Special education schools with greater provision of resources are associated with a more positive attitude towards teaching children with autism (Rodriguez *et al.*, 2012). Teachers however, often feel overwhelmed by the needs children with autism (Friedlander, 2008; Parson *et al.*, 2009). They often face considerable obstacles in appropriately managing their needs (Lindsay *et al.*, 2013) and feel isolated by the amount of responsibility (Jeloudar, 2011). Children may often exhibit behaviours ranging from refusing to do work, not following instructions to more challenging examples such as harming others and self-harming. Managing behaviour is a major challenge for teachers of pupils with autism who may experience even higher levels of stress due to the complex learning challenges their students present (Jennett, Harris, & Mesibov, 2003). The field of special education has experienced high numbers of teachers who leave due to the demands of the job (Billingsley, 2004).

Once teachers are employed, the availability of quality in-service training on evidence-based practices in autism is limited (Lang *et al.*, 2010). A National Autistic Society (NAS) report in 2002 revealed that almost three quarters (72%) of schools

were dissatisfied with the extent of their teachers' training in autism. There is no evidence of Local Authorities (LAs) centrally recording staff training so it is difficult to know the extent of autism-specific training in schools. In schools identified as having pupils with autism spectrum disorders, only 22% of teachers had received some autism-specific training; the majority only for between one and four hours. Approximately one in five schools (21%) with pupils with autism or Asperger Syndrome have no teachers with autism-specific training at all.

Undeniably, teaching children with autism is a challenging task. The attitudes of teachers vary as does the available provision. Training and support are essential in meeting the needs of the children. Considering the challenges children with autism present with, in particular in the areas on communication and behaviour, it is important that teachers receive adequate training and support in those areas to adapt their teaching to the needs of the children. Training can occur in different forms. Schools provide in-service training, organise courses for teachers and also teachers are encouraged to seek sources for their own professional development. At this point, it is important to look at how teachers feel about their own capabilities in carrying out and dealing with all aspects of teaching children with autism, in other words to look at their efficacy. As can be seen later, the belief in their capabilities plays a major role in the way teachers teach, manage behaviour, support staff and promote student learning.

1.2.4 Teachers' Efficacy

Teacher efficacy research, historically, began with the Research and Development (RAND) Corporation studies in 1976. Teachers' efficacy has been defined as 'teachers' belief or conviction that they can influence how well students learn, even those who may be considered difficult or unmotivated' (Guskey & Passaro, 1994: 628). It has been linked to teacher effectiveness and student attainment (Henson *et al.*, 2001), classroom behaviour and practices (Ashton *et al.*, 1983). Low teacher efficacy leads to low student efficacy and low academic achievement, which in turn leads to further declines in teacher efficacy (Bandura, 1997a). Conversely, teachers

who believe strongly in their efficacy tend to be open to new ideas, more willing to try new methods, more committed to teaching, more resilient to difficulties in work conditions, and tend to be less critical of students who make errors (Ashton & Webb, 1986; Coladarci, 1992; Gibson & Dembo, 1984; Tschannen-Moran & Woolfolk Hoy, 2001).

Bandura (1997a) defined four sources of efficacy expectations: Performance Accomplishments, Vicarious Experience, Verbal Persuasion and Emotional Arousal. According to Ross *et al.* (2004: 178) school processes contribute significantly to the four sources of efficacy beliefs 'by influencing teacher cognitions about mastery experiences, by providing opportunities for vicarious experiences, through persuasion, and by protecting teachers from the dysfunctional effects of negative emotional states'. Understanding the potential sources of self-efficacy for teachers of students with disabilities, such as autism, can help identify factors to target for professional development activities and on-going teacher support initiatives (Ruble *et al.*, 2011).

The efficacy of special education teachers has been explored considerably less than the efficacy of mainstream education teachers. A number of research studies in the area of special education (e.g. Allinder, 1995; Guskey & Passaro, 1994, Schwarzer & Hallum 2008; Soodak *et al.*, 1998 etc.) have associated higher levels of efficacy with better quality of teaching and better learning outcomes for children with special needs. Research on special needs teachers' efficacy has also revealed that the overall efficacy scores were found to be high whilst the levels of efficacy for mainstream teachers as well as their attitudes towards inclusion of children with special needs varied (Carlson *et al.*, 2002; Paneque & Barbetta, 2006; Garbegoglio *et al.*, 2012).

The efficacy of special needs teachers has also been linked to experience as well as training. Teachers' beliefs in their ability to provide meaningful help to their students with learning difficulties may be related to teaching experience (Jones *et al.*, 2013). Peebles and Mendaglio (2014) also showed that prior experience with people with

exceptional needs was associated with higher levels of self-efficacy. Yeo *et al.* (2008) found that years of teaching experience were related to both self-efficacy and sense of coherence. Levi *et al.* (2013) found that special education teachers, who were specifically trained to meet the particular needs of students, felt more competent in their ability to teach students with learning disabilities and were generally more hopeful in their ability to achieve their goals

1.2.5 Efficacy of teachers of pupils with autism

Research on the efficacy of teachers for students with autism is extremely limited. At the present time, and to my knowledge, only seven studies have been carried out to look at the efficacy and teachers of pupils with autism and one that looked at social workers for individuals with autism. These studies looked at different aspects of self-efficacy. They are explored in detail in the literature chapter. In summary, two of the studies, Jennett *et al.* (2003) and Siu and Ho (2011), looked into whether the choice of specific teaching orientation, in their case (Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH) or Applied Behaviour Analysis (ABA) had an impact on teachers' personal efficacy. Ruble *et al.* (2010) and Boomgard (2013) examined associations between sources of efficacy and self-efficacy. In 2013, Ruble *et al.* addressed the issue of appropriate measurements for the self-efficacy of teachers for children with autism. They carried out a study to evaluate a new measure, the Autism Self-Efficacy Scale for Teachers (ASSET) for its dimensionality, internal consistency, and construct validity. Strong, (2014) in her doctoral research, investigated teacher perceptions of professional training about teaching students with autism and the relationships between teachers' knowledge about, and skill acquisition of, evidence-based practice and self-efficacy. Around the same time Dimopoulou (2014) looked into self-efficacy and collective efficacy of teachers of pupils with autism in satisfactory and outstanding schools as graded by the Office for Standards in Education (Ofsted). This small-scale study was based on the preliminary results of the present doctoral study and it will be discussed in more detailed in Chapter 2.

1.2.6 Collective efficacy

The concept of collective efficacy has been examined less frequently than self-efficacy (Pajares, 1997). Collective teacher efficacy refers to teachers' belief about the collective capability of a group of teachers to influence student achievement (Goddard, LoGerfo & Hoy, 2004). Teacher collective efficacy is measured by 'teachers' perceptions of school or group collective efficacy rather than the 'school's' sense of collective efficacy as an aggregate of teachers' group-referent efficacy perceptions' (Goddard, Hoy & Hoy, 2004:7).

Research has shown that the collective perception of teacher efficacy in schools also influences how well all students in that particular school perform (Bandura, 1993, 1997a; Barr, 2002; Goddard, 1998, 2001, 2002; Goddard & Skrla, 2006; Goddard, Hoy & Hoy, 2000; Hoy, Smith & Sweetland, 2002). The assumption is that when teachers in a school believe that the staff as a whole can be successful, they will be more likely to persist in their own personal efforts to achieve such success (Goddard, 2001). A number of research studies in the area of special education (e.g. Allinder, 1995; Guskey & Passaro, 1994, Schwarzer & Hallum 2008; Soodak *et al.*, 1998 etc.) have associated higher levels of efficacy with better quality of teaching and better learning outcomes for children with special needs which are largely similar to the outcomes of research for mainstream teachers. The concept of collective efficacy in special education and teachers of pupils with autism in particular has been inadequately explored. My own study (Dimopoulou, 2014) is the only recorded study in the UK examining the self-efficacy and collective efficacy of teachers in satisfactory and outstanding schools. It found that both constructs were higher in outstanding schools. The results of this study are examined in more detail in Chapter 2.

As a result of the very small size of this literature, only a few aspects of efficacy have been explored. Limited sample and the difficulty in comparing studies challenge the generalisability of the results. In addition, most of these studies are quantitative, with little or no actual exploration of teachers' views. This study tries to add more dimensions to the current research and explore in depth issues such as

experience and achievement in relation to self-efficacy of teachers of pupils with autism as well as collective efficacy for which there is either limited or no evidence.

1.3 Importance of the study

This chapter so far has provided a theoretical background and some important facts relating to the education of children with autism in the UK. All this combined suggests that there are a very large number of children with autism being educated in the UK at the moment. Children with autism present with challenges in the communication and social area with associated behaviour difficulties. Teachers carry considerable responsibility in managing and overcoming those barriers to enable the students to reach the maximum of their potential and achieve. At the same time there is an amount of pressure from schools and governments to produce outcomes.

Research, discussed earlier, has evidenced that teachers require skills and training. It has also shown that beliefs in their capabilities in teaching children with autism, their self-efficacy, are closely linked to achievement. With regard to teachers of pupils with autism the research is extremely sparse and studies exploring self-efficacy and collective efficacy in depth are practically non-existent in the UK. At the same time the importance of evidence based practice is undeniable. Hence there is a very obvious gap in researching the self-efficacy and collective efficacy of teachers for children with autism in the UK.

Research so far, in the UK and elsewhere, in the area of autism has largely focused either on the children or on interventions. This of course represents a great advancement in the past twenty years but it is also important to find how efficacious teachers feel in educating the children, managing challenging behaviour and delivering differentiated teaching strategies. Exploring the teachers' views enables us to identify what factors may influence their self-efficacy and collective efficacy. These could have a considerable impact on the quality of teaching and learning. The literature has already identified four sources of self-efficacy. This study adds evidence on how these sources as well as other factors influence the efficacy of

teachers for children with autism, given the markedly different teaching environments compared to mainstream education and also what other factors may be influencing their efficacy. Such information would be a valuable tool in the hands of individuals in senior positions, such as Headteachers, Local Authority officials and policy makers.

1.4 Personal Reasons for this study

This study for me is not only a contribution to knowledge and research but also it is a topic very close to my heart. I have worked in the field of autism education for over a decade. After completing my Master's degree focusing on communication and language impairments for children with autism, I worked in a variety of schools, both special and mainstream and I have been a member of senior leadership teams for the past six years. I have seen and worked with a large number of children with autism and also experienced a range of practices.

I have always had to manage individuals, including teaching assistants, teachers or Heads of Department. I have always been interested in finding out how they feel about their roles. Confidence and self-esteem are often discussed particularly in terms of how they affect practice. I was intrigued to find a more deep-rooted and established construct in order to try and understand what individuals think about their roles and capabilities. When I read Bandura's theory of efficacy I related it to my experiences and what was happening in my environment and this urged me to pursue it further.

Exploring self and collective efficacy has been a journey to better understand myself as a practitioner, teacher and leader. I have used a self-reflection process to identify my beliefs in my own capabilities in different aspects of my role, what drives them, what sets them back and how they vary. This process of self-theory and professional exploration has and will assist me in becoming a better practitioner and leader and ultimately have an impact on the outcomes and quality of teaching for both my current and future students.

1.5 Research Questions

The nature of this study is exploratory. The research questions are aimed at addressing my personal and professional interests and to contribute to the current research gaps as identified in the literature.

This study followed a mixed methods approach. It took place in two phases and employed an explanatory sequential design. This particular design was chosen not only to answer the initial research questions but also to provide focus areas for exploration in the second, and main, phase of this study. The first phase was the quantitative phase, the scoping phase as described earlier. At this stage I wanted to find out the following:

Question 1: What are the self-efficacy beliefs of teachers of pupils with autism?

Question 2: Do self-efficacy beliefs correlate with demographic factors and pupil achievement?

Question 3: What are the collective efficacy beliefs of teachers of pupils with autism?

Question 4: Do collective efficacy beliefs correlate with demographic factors and pupil achievement?

Question 5: Is there a correlation between self-efficacy and collective efficacy of teachers of pupils with autism?

In order to answer the above questions, I distributed three questionnaires. The TSDES (Teaching Students with Disabilities Efficacy Scale) (adapted from Dawson, 2010) was used to measure self-efficacy. An amended version of the 'Collective Efficacy Teacher Belief Scale' by Tschannen-Moran and Barr (2004) was used to measure teachers' collective efficacy. I also constructed a demographic questionnaire and information about the grade each school received by Ofsted. The purpose of the demographic questionnaire was to collect information regarding the position, experience, education and training in order to relate those to self-efficacy and collective efficacy results. I sent out the questionnaires to a number of schools

for children with autism or with autism specific units across the country based on databases from The National Autistic Society and Department for Education (DfE). I gathered 77 responses. Details of the data collection procedures are provided in Chapter 3 and 4.

The analysis of the survey provided new and under-explored evidence. The results provided direction for further exploration in the second phase. The literature, my experience as well as my personal interests further shaped the research questions of the second phase. This intermediate process is detailed in Chapter 5.

This second, qualitative phase, aimed to explore in depth the self-efficacy and collective efficacy beliefs of teachers of pupils with autism. More specifically, the qualitative phase looked at teachers' views, thoughts and feelings while also exploring the factors affecting self-efficacy and collective efficacy as well as their perceived impact on teaching and learning. The following questions were formulated and explored through semi-structured interviews:

1. Do teachers think that self-efficacy impacts on their teaching and pupil achievement?
2. Do leaders impact on teachers' self-efficacy?
3. Do colleagues impact on teachers' self-efficacy?
4. Does experience impact on teachers' self-efficacy?
5. Does pupils' behaviour impact on teachers' self-efficacy?
6. Does managing staff affect teachers' self-efficacy?
7. Does teachers' self-efficacy vary?
8. Do perceptions of stress impact on self-efficacy?
9. What do teachers think about collective efficacy in their school?
10. Do Ofsted graded outstanding schools influence teachers' self-efficacy?

This was the main phase of the study. In order to find the answers to my questions I explored the participants' views through interviews. I chose five schools and

conducted a total of twenty-four interviews with senior and non-senior teaching staff. A full list of the participants is provided in Appendix 5. I followed a thorough process of thematic analysis. I wanted to find answers to my research questions as well as allow new themes to emerge based on the participants' experiences. The methodology and analysis of the qualitative phase are explored and discussed in Chapters 3 and 6.

1.6 Philosophical Approach

The decision about a suitable philosophical framework for this research was made after an exploration of the relevant literature. A defining factor in the adoption of a paradigm was a choice I had to make on whether I wished to explore a certain aspect of the phenomena, test the existing theory or allow themes to emerge. The process of thinking and contemplating on methodological suitability within research, while attempting to develop a concrete view of thinking, employs the concept of different and at times overlapping 'paradigms'.

During my exploration of the literature regarding paradigms and trying to find where I stand in the spectrum of epistemology and ontology, I related to pragmatism and interpretivism. The first represented the methodological 'freedom' and the second encompassed my world view in terms of the exploratory character of this study. Pragmatism suggests that 'what works' to answer the research questions is the most useful approach to the investigation, be it a combination of experiments, case studies, surveys or whatever, as such combinations enhance the quality of the research (Cohen *et al.*, 2011:23). I related to the 'freedom' in choosing 'what works best' which has always been my thinking and approach in exploring teachers' efficacy. On the other hand, I felt that the idea of interpretivism that social reality is seen by multiple people and these multiple people interpret events differently leaving multiple perspectives of an incident, captured my research intentions better. I found that Mertens (1998:11) encompassed my philosophical stance, in stating the importance of researchers understanding participants from their points of view: 'the researcher should attempt to understand the complex world of lived experience from

the point of view of those who live it'. This is what I was looking for and is what made me think and decide that I was an interpretivist as in the sense that sought to explore the views of the participants and a pragmatist in the sense that I chose all the methods that answered my questions. Adopting interpretivism as a paradigm, I entered the social world of teachers of pupils with autism. I engaged with them and collected in-depth information regarding their self and collective efficacy. From the data I collected I made interpretations in order to answer the research questions. Knowledge has to begin with collecting facts and then trying to find some order in them (Marshall, 1997: 17).

1.7 Layout of the thesis

This thesis is divided into seven Chapters.

Chapter 1- Introduction: This chapter 'Sets the scene' for this study. It outlines the purpose and importance of this study. It provides a summary of the theoretical background, presents the research questions and explains the methods and the philosophical stance of the researcher. It states the purpose, importance and reasons for the study and identifies the research gaps.

Chapter 2 – Literature review: This chapter provides a thorough insight into the theoretical background of this study. It presents and discusses Bandura's theories. Bandura's social cognitive theory is the main theoretical underpinning of the review and the research, as it has also been for previous studies which explored efficacy and teacher's efficacy in particular. This chapter details and reflects on the research on teachers' self and collective efficacy. This chapter also addresses the research gaps as it becomes apparent that the evidence around self-efficacy of teachers of pupils with autism is very limited and the research on collective efficacy of teachers of pupils with autism is even more so.

Chapter 3 - Methodology Overview: This chapter provides an overview of the methodology of this study. It explains the design and outlines the theoretical and practical structure of the research model. A mixed methods approach was followed. An explanatory sequential design was chosen to allow for a greater variety of data and deeper understanding of the issues explored. A quantitative stage preceded a qualitative stage.

Chapter 4 - Phase 1, Quantitative: This chapter presents the methods of the quantitative stage and provides an analysis of the survey results. Seventy-seven participants completed the questionnaires, both online and in hard copy. The quantitative analyses explored relationships between the independent variables (demographic information, school information, Ofsted ratings) and the dependent variables; self-efficacy and collective efficacy. The results of the quantitative study, in line with the explanatory sequential design, provided the path and highlighted the issues which were later explored during the qualitative phase.

Chapter 5 – Connecting Quantitative and Qualitative Phases: This short chapter details the transition stage between phase 1 and phase 2 and discusses how the data was integrated and the thinking behind the choice of issues to be further explored in phase 2.

Chapter 6 - Phase 2, Qualitative: This chapter provides a thorough analysis and discussion of the qualitative data. Twenty-four participants from five special schools that cater for children with autism in the area of Greater London were interviewed. The interviews were semi-structured and the participants were very willing to elaborate on their practice in relation to self-efficacy and collective efficacy. Due to the limited amount of time, self-efficacy was explored in greater depth compared to collective efficacy. The themes are presented and discussed while making comparisons to the literature.

Chapter 7- Discussion: This chapter provides an overall discussion and answers to the research questions. It presents the contribution of this study and the new

knowledge. It addresses the limitations of the study and provides suggestions for future research.

Summary

This chapter aimed at setting the scene and providing details about the nature, the methodology of the study and the way it was conducted. This chapter also highlighted the research gaps in existing literature. This study aims to provide more evidence by posing research questions and exploring them through an in depth investigation. What follows is a journey in exploring the theories of self -efficacy and collective efficacy, identifying what is missing from the literature and how this study contributes to knowledge. Chapter 2 explores the literature relevant to the nature of this study. It also focuses on the themes that emerged from this study, as follows:

1. Children
2. Experience
3. Support and Collaboration
4. Vicarious experiences
5. Verbal Persuasion
6. Emotional states

Chapter 2 - Review of the literature

Introduction

This chapter provides an overview of the literature related to this study. I provide a theoretical background to self-efficacy and collective efficacy beliefs of teachers of pupils with autism.

The review of literature was conducted in a systematic way. The process of systematically reviewing the literature was defined by the Centre for Reviews and Dissemination at the University of York (2001) based on the work of the Cochrane Collaboration as ‘a review of a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise relevant research, and to collect and analyse data from the studies that are included in the review. Statistical methods (meta-analysis) may or may not be used to analyse and summarise the results of the included studies’. In line with this definition the following steps were taken:

1. Formulating the question: Literature relevant to social cognitive theory and autism led, including other factors as described in Chapter 1, in the formulation of the research question. The process of the literature review became systematic after that point.
2. Identify relevant sources/studies: Textbooks and online databases were used as sources. Books were identified by using the university’s library search engine. A combination of the following terms was used: efficacy, social cognitive theory, teachers professional development, autism, special education, autism education. Google and the university’s online database were used to search online articles. The terms used were: efficacy, teachers’ self-efficacy, collective efficacy, autism and social cognitive theory. The bibliography of books and articles read prompted the identification of more relevant resources e.g. either books or articles.
3. Assessing quality of the studies: Articles and books were included in the literature review if they met the following criteria a) were relevant to the education

of pupils with autism, b) were peer reviewed, c) were judged methodologically valid and reliable d) were relevant to the efficacy of teachers. Because of the shortage in literature on the efficacy of teachers of pupils with autism, all relevant sources were included. Due to their short number and relatively recent publication data, geographical and date limits were not imposed. The electronic search results were sorted both by relevance and by date. The literature reviews also developed in a 'snowball' way by visiting sources included in the bibliography of articles I read. Sources which were not deemed methodologically strong or I felt did not add to the argument were not included.

4. Interpret the findings: The relevant literature was presented and discussed. The findings of studies were synthesised, compared and contrasted. The studies on self and collective efficacy were discussed in relation to teachers of children with autism. Biases were eliminated by including a wide range of opinions available as well as studies from different sources such as books, peer reviewed articles, conference papers and theses.

The review of the literature begins with an overview of the social cognitive theory, as it is the foundation of the construct of efficacy. Within this section the reciprocal causation relationship between the individual, his/her behaviour and his/her environment is described and explored. This chapter presents an early history of and background to efficacy research and the sources of efficacy leading on to teachers' efficacy and collective efficacy research. This chapter explores in detail self-efficacy and collective efficacy research relating to teachers, with an emphasis on special education teachers and those of children with autism.

2.1 Social Cognitive Theory

Theories must accurately demonstrate predictive power; 'they must closely identify the determinants of human behaviour as well as the intervening mechanisms responsible for the changes' (Bandura, 1997a: 5). The Social Cognitive Theory of human functioning was developed by Bandura in the mid-1980s in order to explain how individuals develop and that the ways human behave are interlinked with their

own selves and the influences they receive from the environment. Social cognitive theory provides a framework for understanding, predicting, and changing human behaviour. It posits (Bandura, 1997a,b) that an individual's behaviour is primarily learned through his or her observation of others as well as through interactions with his or her environment.

Social cognitive theory stemmed from the work of Miller and Dollard who in 1941 proposed the theory of social learning. Central to their theory is the idea that individuals learn behaviours by observing others, if they are sufficiently motivated to do so. In other words, the behaviour they would want to learn would be related to favourable outcomes. By imitating these observed actions individual observer would solidify that learned action and would be rewarded with positive reinforcement (Miller & Dollard, 1941). From a social learning viewpoint 'psychological functioning is explained in terms of a continuous reciprocal interaction of personal and environmental determinants' (Bandura, 1997a:12). In 1963, Bandura and Walters broadened the theory of social learning to include the principles of observational learning and vicarious reinforcement as follows:

- Learning can occur by observing the behaviours of others as well as the outcomes of those behaviours
- Learning can occur without change in behaviour
- The consequences of behaviour affect learning
- Cognition affects learning.

Bandura later altered the label of his theory from 'social learning' to 'social cognitive theory', in order to distance it from the prevalent social learning theories of the day and to 'emphasise the critical role of cognition in people's capability to construct reality, self-regulate, encode information and direct behaviour' (Pajares, 2002:1). Social cognitive theory supports the sense that learning occurs through a number of processes: symbolic, vicarious and self-regulatory which hold a prominent role in the acquisition of new knowledge and behaviours:

Symbolic: The capability for intentional action is rooted in symbolic activity. Through verbal and imagined symbols people process and preserve experiences in representational forms. Through symbolising people can conceptualise experiences and solve problems without having to enact all the various solutions.

Vicarious: ‘One forms an idea of how new behaviours are performed by observing others and, on later occasions, this coded information serves as a guide for action’ (Bandura, 1977:22). By observing others, people are able to see behaviours and their consequences. In social cognitive theory, modelling holds a conspicuous position in the ways people learn. Through modelling, people acquire symbolic representations that, as mentioned earlier, enable future intentional actions.

Self-regulatory: Social cognitive theory recognises self-regulatory capabilities as a prominent component of learning. By combining environmental, societal and personal influences, individuals are able to reflect and exercise some measure of control over their own behaviour.

Social cognitive theory was founded through an agentic perspective (Bandura, 1986) and is concerned with human agency, or the ways that people exercise some level of control over their own lives (Goddard, Hoy & Hoy, 2004). According to Bandura (2001:1) ‘personal agency operates within a broad network of socio-structural influences’. In these agentic transactions, people are producers as well as products of social systems. Most human behaviour is determined by many interacting factors, and so people are contributors to, rather than sole determiners, of what happens to them (Bandura, 1997a). Social cognitive theory acknowledges the influential role of evolved factors in human adaptation and change, but it rejects one-sided evolutionism in which evolved biology is seen to shape behaviour whilst the selection pressures of social and technological innovations on biological evolution are ignored (Bandura, 2001).

2.1.1 Social Cognitive Theory and Other Theories of Learning

Social cognitive theory has often been perceived as a link between behaviourism and cognitivist learning theories because it encompasses elements of both such as attention, memory and motivation. Different theorists have conceptualised learning in different ways. Bandura's ideas have been very influential on contemporary learning researchers. Social cognitive theory, due to its 'social' strand, does also relate to Vygotsky's (1962) Social Development Theory, as well as Lave's (1982) Situated Learning theory, which also lays emphasis on the significance of social learning.

Environmental theories such as Skinner's (1938) operant conditioning, Pavlov's (1902) classical conditioning or Thorndike's (1913) law of effect all support the view that a person's behaviour is determined by environmental influences or genetic reasons. People are not driven just by their own thoughts. Bandura accepted the possibility of an individual's behaviour being conditioned through the use of consequences and also according to reciprocal determinism. He acknowledges that a person's behaviour can have an impact on the environment (Sternberg, 1988). The same is true of the relationship between personal factors such as cognitive skills or attitudes and behaviour or the environment. Each can impact and be impacted by the other.

Bandura (1977a) opposed behaviourists' beliefs that the environment predominantly controls behaviour by arguing that individuals possess traits or dispositions that lead them to behave consistently under changing circumstances. He recognised the influence of external reinforcement, stimulation and influences of such thought processes as beliefs, expectations and instructions, while pointing out that people are not merely acting like machines that automatically respond to external stimuli. On the contrary, reactions to stimuli are self-activated and initiated by the person. Bandura, in a later paper on social cognitive theory in 2001, further elaborated on the function and importance of human agency. He noted that the capacity to exercise control over the nature and quality of one's life is the essence of human-ness. He also

explained that human agency is characterised by a number of core features that operate through phenomenal and functional consciousness. These include the temporal extension of agency through intentionality and forethought, self-regulation by self-reactive influence, and self-reflectiveness about one's capabilities, quality of functioning, and the meaning and purpose of one's life pursuits.

2.1.2. Vicarious learning

Learning by observation and modelling is the focus of social cognitive theory. Bandura (1977) based his theory on what and how people learn from one another, encompassing concepts of observational learning, modelling and imitation. People learn through observing the behaviour of others, their attitudes and dispositions as well as the outcome of such behaviours. Unlike preceding theories, according to Bandura (1977:12), 'all learning phenomena resulting from direct experience occur on a vicarious basis by observing other people's behaviour and its consequences on them'. Bandura and Walters (1963:89) define observational learning as 'the tendency for a person to reproduce the actions, attitudes or emotional responses exhibited by real-life or symbolised models'.

Bandura argued that the acquisition of certain characteristics, personality traits and certain types of behaviour derive from modelled behaviour. He also recognised, on the other hand, that some behaviours are indeed the result of direct training or conditioning of some form (Bandura, 1963). This assumption was also supported by the results of the famous Blow-Up (Bo-Bo) Doll experiment (Bandura, 1963), which he undertook with a group of young children. However, the influence of modelling on one's behaviour does extend to the adult world and expands to professional communities too.

Bandura (1989) asserts that, through modelling, individuals not only learn behaviours, but they are also taught judgement and morality and helped to develop cognitive abilities. The development or formulation of cognitive abilities and behaviours through modelling is again a process that depends on the personal factors

affecting individuals. Individuals have different capabilities, thoughts and ideas and therefore the way they act varies greatly. Teachers who observe and model someone else's teaching are not likely to apply it in exactly the same way. This will depend on their personal capabilities as well as being influenced by their environment – not least the children. Also, people are more likely to adopt modelled behaviour if it results in outcomes they value than if it has unrewarding or punishing effects (Bandura, 1977).

2.1.3 Processes of observational learning

There are four defined processes in observational learning: Attention, Retention, Motor Production and Motivational Processes.

First, in order for the learning process to begin 'people must attend to and perceive accurately the significant features of the modelled behaviour' (Bandura, 1977:24). The degree of attention varies. Within a social group people will not pay attention to the same behaviour to similar degrees. The features they choose to focus on depend on their experiences, situational requirements and other personal factors which then lead to different interpretations amongst the observers. With regards to the characteristics of models, 'those who have high status, competence and power are more effective in prompting others to behave similarly than are models of lower standing' (Bandura, 1977:88). The effect a model will have on an individual depends also on their own characteristics and the way they perceive themselves. It is argued that 'those who lack confidence and self-esteem, who are dependent, and who have been frequently rewarded for imitateness are especially prone to adopt behaviour or successful models' (Bandura, 1977:89).

At a second stage the information needs to be retained. In order to learn, people need to remember activities they observed and the information they received. The role of symbols at this stage is again necessary as in this way transitory modelling experiences can be maintained in permanent memory (Bandura, 1997a). Retention relies mainly upon two representational systems, imaginal and verbal. Modelled

behaviours can be stored as retrievable images or they can be coded verbally and later retrieved and mentally rehearsed. Once the information has been stored and mentally processed it is time to convert the symbolic representations into action (Bandura, 1977a).

The motor production of the behaviour involves the enactment following the previous stages of attention and retention. Enactment may involve a series of trial and error attempts and through feedback actions and skills can be perfected. Actions are not necessarily a pure reproduction of the observed behaviour. Through cognitive process and based on each individual's level of skills and experience, the demonstration takes a unique form.

Reinforcement can have a strong impact on future actions; however people do not solely rely on this. They guide their actions by prior notions rather than relying on outcomes to tell them what they must do (Bandura, 1977). Reinforcement serves principally as an informative and motivational operation rather than as a mechanical response 'strengthened' (Bandura, 1977). This idea of reinforcement from the environment, as mentioned earlier, on its own resembles the core of behaviourism; the difference is that in social cognitive theory reinforcement is only one aspect of the process and that information is being processed and influenced by the environment and cognition in a reciprocal way as explained previously. Motivational factors or the anticipation of positive or negative reinforcement may augment or reduce the probability of observing responses, which is an essential aspect of imitative learning (Bandura & Walters, 1963).

The process of observational learning as described above is a concept applicable to teachers and new teachers in particular. Here is an example of how this process could apply to a teacher of children with autism: A teacher visits a school for children with autism. The teacher observes another teacher delivering an intensive ABA session to teach how to add single digit numbers (Attention stage). The teacher researches ABA, tries to remember the techniques and resources, makes notes and

thinks how she could apply this in her own classroom (Retention stage). The teacher sets up a session with one of her own students with autism with similar attainment to the student she observed in the school she visited. She sets up the resources and delivers the session (Motor production stage). A few days later the teacher is observed by a member of the senior leadership team delivering the session and receives positive feedback (reinforcement). At the same time, she also observes that the student responds well to her sessions and spends more time on task. This is now a positive experience for the teacher and through observational learning she learned a new skill and adopted a new behaviour. The outcome could have been different if the feedback the teacher received was not positive or if the pupil had not responded to the intervention. This process is more complicated and as is discussed below it is influenced by the environment as well as the behaviour and the individual's psychological factors.

2.1.4 Reciprocal Determinism – Triadic reciprocal causation

From a social learning perspective, psychological functioning is a continuous reciprocal interaction between personal, behavioural and environmental determinants (Bandura, 1977). One of the most important concepts developed by Bandura (1986) is that of reciprocal determinism (Figure 1). According to the idea of reciprocal determinism, behaviour is the result of the simultaneous interaction of a person's characteristics, behaviour, and the environment/situation within which the behaviour is performed (McAlister *et al.*, 2008). From this point of view, a person's behaviour is both influenced by and influences another person's personal factors and the environment. It draws on a model of causation involving triadic reciprocal determinism. In this model of reciprocal causation, behaviour, cognition and other personal factors, and environmental influences all operate as interacting determinants that influence each other bi-directionally (Bandura, 1989). A later section in this chapter illustrates how this model applies to teachers.

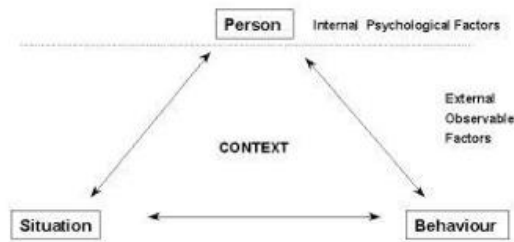


Figure 1 - Model of Reciprocal determinism (Bandura, 1977)

This model of reciprocal causation between these three sources can be visualised and presented diagrammatically as an equilateral triangle: behaviour, cognitive and other personal factors and environmental events all operate as interacting determinants of each other. The disposition of individuals is then defined within this triadic viewpoint. Even though on the diagrammatical representation of this model the elements (person, behaviour, and situation) on the vertices of the triangle appear to be equally distanced from each other, it does not mean that they all have the same effect on each other. The reality is different and the degree of power that each element exercises varies.

Reciprocal causation does not mean that the different sources of influence are of equal strength. Nor do the reciprocal influences occur simultaneously. It takes time for a causal factor to exert its influence and activate reciprocal influences (Bandura, 1989). In fact, reciprocal causation is quite plausible because we are dealing with dynamic processes that unfold over time, rather than with one-directional causal relationships (Bandura, 1997a, 2001). In other words, in order to explain these relationships, sequences of psychosocial experiences need to be understood first rather than just isolated episodes.

This standard model of mechanism of exchange of information uses a unique application for each individual. Each person carries their own thoughts, experiences and beliefs and each person is being exposed to different environments and behaviours that are then filtered and affect each other in a unique way. Individuals hold their own self-directive capabilities and they are therefore able to exercise

significant control over their thoughts, feelings and actions. There is a continuous interaction between the individual's qualities and the external sources of influence. People create their own rules and determinants for their behaviour, they hold different self-motivators for pursuing certain courses of action and then respond to their behaviours in a self-evaluative and reflective way. The way individuals process the judgment of behaviours is based on the feedback, attitudes and reactions of other, often significant, people to this behaviour. It is useful to consider the particular way the pairs within the triad affect each other.

Personal Factors and Behaviour

The Personal Factors and Behaviour of reciprocal causation reflect the interaction between thought, effect and action. Expectations, beliefs, self-perceptions, goals and intentions give shape and direction to behaviour. What people think, believe, and feel, affects how they behave (Bandura, 1986). People will act differently when they like, dislike, enjoy, feel intimidated, confident or less capable. This dual relationship applies to all aspects of an individual's life both personal and professional.

Environment and Personal factors

The Environment and Personal factors segment of reciprocal causation is concerned with the interactive relation between personal characteristics and environmental influences. Human expectations, beliefs, emotional bents and cognitive competencies are developed and modified by social influences that convey information and activate emotional reactions through modelling, instruction and social persuasion (Bandura, 1986). The social reactions so elicited affect the recipients' conceptions of themselves and others in ways that either strengthen or alter the environmental bias (Snyder, 1981). Through observing the behaviour of others, as it was described earlier in vicarious learning, one is able to formulate ideas and models of appropriate behaviour in their mind and to form expectations and judgments about the likely outcomes of reproducing that behaviour.

Behaviour and Environment

The Behaviour and Environment segment of reciprocal causation in the triadic system represents the two-way influence of behaviour and environment. In the transactions of everyday life, behaviour alters environmental conditions and is, in turn, altered by the very conditions it creates (Bandura, 1986). The situation or conditions that surround a person play a major role in the way they respond. However, as mentioned previously, this is only one of the strands of the triadic relationship and not the only component that is supported by behaviourists. To make their way successfully through a complex world full of challenges, people have to make appropriate judgments about their capabilities, anticipate the probable effects of different events and courses of action, judge socio-structural opportunities and constraints, and regulate their behaviour accordingly (Bandura, 2001). Later in this chapter I discuss how reciprocal determinism applies to teachers.

2.2 Self-efficacy theory

Bandura defined self-efficacy as, ‘people’s judgment of their capabilities to organise and execute courses of action required to attain designated types of performance’ (Bandura, 1986: 391). Self-efficacy has been defined in a number of ways since it was first introduced. Even though the definitions may vary, the majority share the idea of the self-perceptions of the individual of their capabilities. A decade later, in 1995, Bandura elaborated further on self-efficacy by defining it as a regulatory mechanism that influences behaviour in four ways: through (a) enactment of cognitive processes, (b) adoption of goals, (c) creation of increased goal commitment, and (d) expectance that goals will be achieved despite setbacks. Later, in 2002 (Paglis & Green, 2002: 217) extended their thoughts on self-efficacy to include the element of leadership which led to their definition of self-efficacy being a ‘person’s judgment that he or she can successfully exert leadership by setting a direction for the work group, building relationships with followers in order to gain commitment to change goals, and working with them to overcome obstacles to change’.

In Social Cognitive Theory, Bandura illustrated the notion of agent causality. Central to the exercise of control is the sense of self-efficacy or 'beliefs in one's capabilities to organize and execute courses of action required to produce a given attainment' (Bandura, 1997a:3). Bandura (1997a,b) presented self-efficacy as a mechanism of behavioural change and self-regulation in his social cognitive theory. Perceived self-efficacy occupies a pivotal role in the causal structure of social cognitive theory because efficacy beliefs affect adaptation and change not only in their own right, but also through their impact on other determinants (Bandura, 1997a; Maddux & Lewis, 1995; Schwarzer, 1992 in Bandura, 2001). 'Self- judgments of operative capabilities function as one set of proximal determinants of how people behave, their thought patterns, and the emotional reactions they experience in taxing situations' (Bandura, 1998: 59).

Self-efficacy theory is based on the principal assumption that psychological procedures, whatever their form, serve as means of creating and strengthening expectations of personal efficacy (Bandura, 1977b). Self-efficacy theory maintains that all processes of psychological change operate through the alteration of the individual's sense of personal mastery or efficacy (Bandura, 1977, 1982). Unless people believe they can produce desired results and forestall detrimental ones by their actions, they have little incentive to act or to persevere in the face of difficulties. 'Whatever other factors may operate as guides and motivators, they are rooted in the core belief that one has the power to produce effects by one's action' (Bandura, 2001:10).

Self-efficacy beliefs begin to form in early childhood as children deal with a wide variety of experiences, tasks, and situations. However, the growth of self-efficacy does not end during youth, but continues to evolve throughout life as people acquire new skills, experiences, and understanding (Bandura, 1992). In their daily lives, people continuously have to make decisions about what courses of action to pursue and how long to continue those they have undertaken. 'As acting on misjudgements of personal efficacy can produce adverse consequences, accurate appraisal of one's

own capabilities has considerable functional value' (Bandura, 1998:59). Bandura (1982) highlighted a positive correlation between the level of efficacy by stating that the stronger the instilled sense of coping self-efficacy, the bolder the behaviour.

Self-efficacy has to do with self-perception of competence rather than actual level of competence (Tschannen-Moran *et al.*, 1998). Self-efficacy is the idea that people decide how to behave based more on their belief in their own capabilities rather than in their knowledge or skills (Pajares, 2002). Bandura (1986) clarified that self-efficacy is concerned not with the skills one has but with the capacity of what one can do with whatever skills one possesses. This is an important distinction, because people regularly overestimate or underestimate their actual abilities, and these estimations may have consequences for the courses of action they choose to pursue or the effort they exert in those pursuits (Tschannen-Moran *et al.* 1998).

Self-efficacy theory acknowledges the diversity of human capabilities and it therefore treats the efficacy system not as an omnibus trait but as a differentiated set of self-beliefs linked to distinct realms of functioning (Bandura, 1997a). Since people are unique units with their own sets of characteristics, abilities and cognitive mechanisms, different people with similar skills, or the same person under different circumstances, may perform poorly, adequately, or extraordinarily, depending on fluctuations in their belief of personal efficacy (Bandura, 1986). Efficacy expectations differ in magnitude, generality and strength. This means that individuals develop different efficacy expectations based on the difficulty of the tasks they are faced with, the area in which they feel capable of applying their skills as well as the strength of their expectations in mastering the tasks (Dimopoulou, 2014). The self-assurance with which people approach and manage difficult tasks determines whether they make good or poor use of their capabilities. Lack of self-belief can compromise the skills one possesses, as Bandura (1997a: 35) supports that 'insidious self-doubts can easily overrule the best of skills'.

Another important distinction, which has also caused confusion, is between perceived self-efficacy and self-esteem although the two concepts are different. The first is concerned with judgements of personal capability, whereas the second is concerned with judgements of self-worth (Bandura, 1997a). Also, self-esteem reflects a person's overall evaluation or appraisal of his or her own worth. According to Gist & Mitchell (1992), self-esteem usually is considered to be a trait reflecting an individual's characteristic, affective evaluation of the self (e.g., feelings of self-worth or self-liking). By contrast, self-efficacy is a judgment about task capability that is not inherently evaluative. For example, a rocket scientist may have very low self-efficacy pertaining to dancing, yet may decide on reflection that this is satisfactory and that it does not diminish his or her overall evaluation and feelings about the self. Even though self-esteem and self-efficacy are defined differently, it can be said that since self-esteem is related to emotional states (the latter is explored later in this chapter under sources of efficacy), it would also be related to self-efficacy.

2.2.1 Outcome expectation

Self-efficacy theory can be viewed as belonging to the larger family of psychological theories commonly referred to as expectancy-value theories. These theories maintain that the tendency to perform a behaviour is the product of the reinforcement value of the expected outcome and the expectation that a specified behaviour or behaviours will produce that outcome (Maddux *et.al* 1986). Efficacy and outcome expectations have often been seen as a contentious issue and a source of confusion about the way they influence people's tendency to perform a behaviour. Outcome expectancy is defined as a person's estimate that a given behaviour will lead to certain outcomes. An 'efficacy expectation is the conviction that one can successfully execute the behaviour required to produce an outcome' (Bandura, 1977: 79) that he or she can orchestrate the necessary actions to perform a given task (Bandura, 1986).

Another distinction between the two concepts is based on consequence. Outcome expectations are the judgments an individual makes about the likely consequences of specific behaviours in a particular situation or context. Efficacy expectations, on the

other hand, are an 'individual's beliefs about his or her own capability to achieve a certain level performance in that situation or context' (Guskey & Passaro, 1994:629). In other words, efficacy expectations are about what individuals feel they are able to do whereas outcome expectations are about what the outcome of the actions is going to be. Efficacy expectations determine 'how much effort people will expend, and how long they will persist in the face of obstacles and aversive experiences' (Bandura, 1977: 80). Interestingly, Bandura (1977) correlated outcome expectancy with the levels of an individual's efficacy by arguing that expectation alone will not produce the desired performance if the component capabilities are lacking. He asserted that high efficacy and outcome expectancy are linked to effort, while low efficacy and outcome expectancy are linked to complacency.

Outcome and efficacy expectations, although different, are interrelated. Bandura (1986:392) notes that 'the types of outcomes people anticipate depend largely on their judgments of how well they will perform in given situations'. However, he argued that they are distinct conceptually and could be differentiated empirically. Individuals may believe that certain behaviours will produce particular outcomes, but if they do not believe they can perform the necessary actions, they will not initiate the relevant behaviours or, if they do, they will not persist in those behaviours (Guskey & Passaro, 1994). Bandura (1997a,b) also argued that motivation is affected both by outcome expectations, that is judgments about the likely consequences of specific behaviours in a particular situation, and efficacy expectations, the individual's belief that he or she is capable of achieving a certain level of performance in that situation.

Manning and Wright (1983, in Maddux *et al.*, 1986) describe two major problems in differentiating self-efficacy expectancies from outcome expectancies: multiple definitions of outcomes and potential confounding of the two expectancies. Maddux *et al.* (1986) designed a study to assess the relative contributions of self-efficacy expectancy, outcome expectancy, and outcome value (importance) in influencing and predicting behavioural intentions. They found that outcome expectancy had a

significant effect on behavioural intentions, but self-efficacy expectancy did not. They also found them to be equally good predictors of behavioural intentions, and found that outcome expectancy added as much predictability to self-efficacy expectancy as self-efficacy expectancy added to outcome expectancy. Also, outcome expectancy contributed more to self-efficacy expectancy and outcome value combined than self-efficacy expectancy contributed to outcome expectancy and outcome value combined. Their results are in contrast with what Manning and Wright found (1983) which was a strong correlation between self-efficacy expectancy and outcome expectancy.

2.2.2 Task specific

Bandura (1997a) proposed that efficacy beliefs were powerful predictors of behaviour because they were ultimately self-referential in nature and directed toward specific tasks. This means that even though individuals may feel efficacious in performing a certain task, their self-belief in their capabilities in carrying out a different task may be equally different - either higher or lower. An individual may feel highly efficacious to perform a certain task but he /she may have a lower belief in his/her capability to do a different task. A teacher, for example, may feel efficacious in teaching English because the students learn well but at the same time the teacher may not feel efficacious in managing students' challenging behaviour. The judgment of self-efficacy is task and domain specific; therefore, globally defined self-efficacy assessments weaken the effects of self-efficacy (Bandura, 1997a). Consequently, an accurate assessment of an individual's efficacy using an accurate tool is important in identifying the tasks in relation to the strength of self-beliefs. Pajares (1996) also proposed that there exists a mis-measurement of self-efficacy when efficacy beliefs are not tailored to critical tasks.

2.2.3 Impact of self-efficacy on behaviour

Perceived self-efficacy is believed to influence performance accomplishments both directly and indirectly (Zimmerman *et al.*, 1992). This also extends to the influence in the choice of activities, the nature of goals people set for themselves, the effort

and persistence especially in difficult circumstance and ultimately the quality of performance as well as learning. More specifically:

Choice of activities: Self-efficacy helps to determine the life choices individuals make. Individuals tend to select tasks and activities in which they feel competent and confident and avoid those in which they do not (Pajares, 2002).

Goals: Perceived self-efficacy influences the level of goal challenge people set for themselves (Zimmerman *et al.*, 1992). Self-efficacious learners direct their learning processes and attainments by setting challenging goals for themselves (Bandura, 1989). In turn, goals increase people's cognitive and affective reactions to performance outcomes because goals specify the requirements for personal success (Bandura, 1986),

Effort and persistence: Perceived self-efficacy influences the amount of effort people mobilise (Zimmerman *et al.*, 1992). The higher the sense of efficacy, the greater the effort, persistence and resilience of individuals. People with a strong sense of personal competence approach difficult tasks as challenges to be mastered rather than as threats to be avoided (Pajares, 2002).

Quality of individual performance: Perceived self-efficacy is believed to influence performance accomplishments both directly and indirectly (Zimmerman *et al.*, 1992). High self-efficacy helps create feelings of serenity? when approaching difficult tasks and activities. Conversely, people with low self-efficacy may believe that things are more difficult than they really are: a belief that fosters anxiety, stress, depression, and a narrow vision of how best to solve a problem. As a consequence, self-efficacy beliefs can powerfully influence the level of accomplishment that one ultimately achieves (Pajares, 2002).

So far, in this chapter I have explored the social cognitive theory and efficacy theory. In summary, it is clear that the person's own characteristics, their environment and

their behaviour affect learning, which therefore occurs in a unique way for each individual. Self-efficacy is linked to behaviour and affects the way individuals act. Although different from outcome expectations and self-esteem, self-efficacy is influenced by a person's psychological states and the outcomes of their previous actions. Bandura's theories became known and accepted by the academic community; however, they drew scepticism and received criticism as presented below.

2.2.4 Critique of Bandura's Theory

Bandura's Social Cognitive theory, including efficacy theory, has received criticism at theoretical and the methodological levels.

Eastman and Marzillier (1984) criticised Bandura's theory in relation to its definition, precision and methodology. They believe that there is a fundamental ambiguity in Bandura's definition of self-efficacy and that this arises out of his attempt to define self-efficacy expectations independently of outcome expectations. Hence the emphasis placed on outcome in any assessment of people's expectations of change. Similarly, Christina Lee argued that efficacy theory lacks precision and also a framework of the relationships between these cognitions and observable antecedents and consequences (Lee, 1995:118). She described Bandura's self-efficacy theory as a vague descriptive model, not an explanatory theory. Hawkins (1995) also argued that self-efficacy is a predictor but not a cause of behaviour. Bandura (1995) responded to Hawkins' arguments by enlisting a number of studies on self-efficacy and he also contended that Hawkins used his earlier statements out of context. Bandura in his response article used the words 'predict', 'influence' and 'determine' to related self-efficacy to behaviour. Bandura supports a strong relationship but causality, as blamed? by Hawkins, is not clearly evident. Research on self-efficacy provides evidence on the behaviours related with high and low sense of self-efficacy as those are more likely to occur as a result of an individual's level of self-efficacy.

A second point of criticism related to methodological deficiencies. Essentially, Eastman and Marzillier (1984) questioned whether the results obtained by Bandura in his experimental studies did in fact measure self-efficacy as he defined it. This argument was supported by Tryon (1981:113), who raised doubts about the validity of Bandura's reported data in demonstrating that efficacy expectations correlate better with actual performance in a behavioural approach test than scores derived from performance measures. Bandura (1982:195) responded to Tryon's criticism of his test by saying that individuals were not asked 'whether or not they would actually perform' the activities included in the performance test but they were asked to judge whether or not they were capable of performing various activities.

It is essential for theories to be challenged by the academic community. Theories are not tangible entities and are usually open to interpretation. Bandura's self-efficacy theory has received wide recognition by the academic community and the field of education in particular. Self-efficacy is a multi-faceted concept and, as discussed earlier, it is influenced by a number of changing parameters. Methodological scepticism in capturing self-efficacy, especially at the early stages of the research in this field, is a valid argument. However, considerable research has been conducted in the past decades to develop valid tools to measure and account for the task specific nature of self-efficacy in teachers. The next section examines collective efficacy before looking at the application of self-efficacy theory to teachers.

2.3 Collective efficacy

Collective efficacy refers to the perceived 'performance capability of a social system as a whole' (Bandura, 1997a). Based on social cognitive theory, Bandura extended the construct of self-efficacy to the larger, social construct of collective efficacy within group settings. Personal agency operates within a broad network of socio structural influences" (Bandura, 1997a:6) and thus the theory "extends the analysis of mechanisms of human agency to the exercise of collective agency" (Bandura, 1997a:7).

Collective efficacy refers to people's shared beliefs that they can work together to produce effects. The concept of collective efficacy is similar to self-efficacy in that it focuses on the amount of effort and persistence dedicated to a task and the perception of the success of that task (Bandura, 1997a) and refers to the beliefs of the individual in the capabilities of a team. Group achievements are the product not only of the shared intentions, knowledge, and skills of its members, but also of the interactive, coordinated, and synergistic dynamics of their transactions (Bandura, 2001). Beliefs of collective efficacy serve functions similar to those of personal efficacy beliefs and operate through similar processes (Bandura, 1997a).

Collective efficacy beliefs are also influenced by vicarious experiences. They are strengthened by directly observing successful individuals, groups or influential others, especially those that attain similar goals in the face of familiar opportunities and obstacles (Goddard & Skrla, 2006; Goddard & Godard, 2001). This is similar to the influences of vicarious experiences and appropriate role models of efficacy, as discussed earlier.

Teachers' collective efficacy will be explored later in this chapter. At this point it is important to explore and understand the application of Bandura's theories in the teaching context.

2.4. Application of Social Cognitive Theory to Teachers

Bandura (1997a) expanded his analysis of social cognitive theory and reciprocal determinisms to educational settings and teachers in particular.

During their training years as well as in their working environments teachers observe and are exposed to different teaching experiences and styles from their tutors, mentors, managers or other colleagues. Which of these they will choose to attend to depends on a variety of factors. If they think highly of the individuals and perceive them as competent and effective teachers, they will be more engaged in the observation than in cases when the teaching they observe is delivered by someone

who they consider inexperienced, junior or not highly competent. Importantly, the stance teachers adopt is closely linked to their previous experience and interests. The choice of appropriate models depends on a number of characteristics as described below.

Competency: People demonstrating a particular behaviour are more likely to be imitated by others if they are viewed as being competent, capable individuals (Bandura, 1986; Schunk, 1987). A senior teacher or one with years of experience is more likely to model effective classroom teaching strategies than a trainee teacher with minimum classroom experience.

Prestige and power: Individuals who have high status, respect and power, either within a small group or within society as a whole, are more likely to serve as models for others (Bandura, 1986). In a school context and based on this assumption one would think that teachers would most probably imitate senior or more experienced teachers and members of the leadership team. However, this does not exclude cases when good practice is shared and adopted by colleagues on the same level of seniority. This scenario could apply to either big schools or units within a school, between teachers who teach the same year or similar ability level children. This idea is linked also to the idea of competency as described above.

Relevant to the observer's situation: Individuals are more likely to model behaviours that have functional value in their own circumstances (Rosenthal & Bandura, 1978). This statement is likely to be highly applicable in people's professional lives when they are seeking to imitate individuals from their own area of expertise. Similarly, special needs teachers in particular would be more interested in observing professionals who work with children with similar profiles to their students as opposed to mainstream school teachers.

The amount of information retained by teachers post observation varies and is closely related to their experience as well as to their own interests. When it comes to

enacting the behaviour modelled, the observed teaching in this instance, the delivery will again vary, based on the skills of the teacher, their personal teaching style and their views on the effectiveness of the teacher they observed. If for instance a teacher has observed and made symbolic and verbal representation of a TEACCH (Treatment and Education of Autistic and related Communication handicapped Children) lesson whilst they are in favour of the ABA (Applied Behavioural Analysis) approach, their enactment will differ greatly from the modelled act. Most importantly, when it comes to teaching children with special educational needs, the delivery is always highly differentiated and personalised to meet the needs of each student.

According to the modelling learning theory, the way that teaching behaviour will further develop will depend highly on motivational factors. Teachers who receive positive feedback on their teaching will continue to work in the same way or will aim to improve, based on the recommendations. Also, appraisals and other incentives will contribute to the continuation of the behaviour/act. Experiencing failure or negative feedback can have a different effect on each teacher, depending on his or her character and cognitive mechanisms. Regarding outcomes, the impact of the teaching on the actual learning of students is what is more likely to influence future teaching behaviour.

As individuals, classroom teachers proactively lead their lives and base their actions in relation to the three dimensions of social cognitive theory as discussed above. The term 'reciprocal' indicates that an action is given and received by each subject whilst determinism indicates the production of effects. Because of the varied nature of the interacting influences within this triad relationship, different conditions can produce or lead to different effects. The elements/sources 'behaviour' and 'environment' can extend to include various aspects of the school's environment. Teachers are being influenced by their students' behaviour, by the way their colleagues or senior managers conduct themselves, by the attitudes of parents and other professionals and individuals involved in everyday school life. Teachers who enjoy working with children and feel that they can meet the needs of their students are likely to behave

differently compared to those who find teaching difficult and considering other career options. Also, teachers watching their colleagues' competence in teaching will then influence the way they view their capabilities.

In terms of the way the environment affects teachers' behaviour Shidler (2009) explained that teachers require consistent, supported learning opportunities to develop new skills. Moving at their own pace provides teachers with a sense of control over their own learning. This exchange of influences does not necessarily happen in the same degree. However, it is still reciprocal and affects both sources. In an education environment teachers' behaviour and the way they perform their professional duties are influenced by the stimuli they receive from their colleagues, managers and students themselves. Teachers who work in schools with high levels of collegiality are more likely to feel more confident in their teaching and to enable their students to improve their attainment. This will be analysed further.

2.5 Teachers' Efficacy

The development of the construct of teacher efficacy has stemmed from the work of Rotter (1966) on locus of control theory and from Bandura's (1977) social cognitive theory as detailed above. Locus of control refers to the degree to which an individual believes that the perceived cause(s) of an intended outcome are within his or her control (Rotter, 1966).

2.5.1 Teachers' Efficacy definitions

Woolfolk and Hoy (1990) note that the earliest reference to 'teacher efficacy' in the Educational Resources Information Centre (ERIC) system is a study by Barfield and Burlingame (1974:10), in which efficacy is defined as 'a personality trait that enables one to deal effectively with the world'. A teachers' sense of efficacy refers to 'teachers' situation-specific expectation that they can help students learn' (Ashton & Webb, 1986:3). McLaughlin and Marsh, (1978:84) defined efficacy as 'the extent to which the teacher believes he or she has the capacity to affect student performance'. They also identified self-efficacy as one of the few teacher

characteristics related to student achievement (Armor *et al.*, 1976). Guskey (1988) was also influenced by Rotter's theory and incorporated elements of Weiner's attribution theory (1979). He defined efficacy as 'a teacher's belief or conviction that he or she can influence how well students learn, even those who may be difficult or unmotivated' (Guskey, 1987:41). Along the same lines of impact on student learning, Dembo and Gibson (1985:173) defined the construct as 'the extent to which teachers believe they can affect student learning'. Pajares (1992:316) defined the same construct as 'beliefs about confidence to affect students' performance' under an umbrella construct of 'educational beliefs'. A few years later, Ross, Cousins and Gadalla (1996:386) defined teaching efficacy as a form of self-efficacy. They defined it as 'an individual teacher's expectation that he or she will be able to bring about student learning'. I consider their definition to be closer to 'personal teaching efficacy', which is discussed further in this chapter.

Hoy and Spero (2005:34) also defined teachers' efficacy as 'teachers' judgments about their ability to promote students' learning'. A few years later Guskey and Passaro (1994:4) extended their description of teachers' efficacy to include challenging students. For them teachers' self-efficacy was defined as 'teachers' belief or conviction that they can influence how well students learn, even those who may be difficult or unmotivated'.

More recently, Klassen and Tze (2014) described teachers' self-efficacy using terminology from the social cognitive theory and, they also added the motivation element. They ascertained that an individual's self-efficacy operates as an intra-personal motivation variable that captures the core aspects of human agency, embodied as effort and persistence applied to completion of desired goals. On the other hand, Dellinger *et al.* (2008:751) asserted that 'teacher efficacy', which is often shortened from 'teachers' sense of efficacy,' is distinctly different from the concept of teacher self-efficacy and does not adequately represent Bandura's self-efficacy theory.

There is an evident theoretical variation in the definitions of teachers' efficacy, which can lead to misinterpretation of the outcomes of research. Different

researchers have developed different measurements to assess teachers' efficacy and given the dichotomy and variety of the starting points they would potentially measure different things. One major theoretical distinction was the conceptualisation of the teachers' efficacy concept as containing two different terms; Personal teacher efficacy (PTE) and General teacher efficacy (GTE), which are discussed below.

2.5.2 Teacher Efficacy Research

Teacher efficacy research, historically, began with the work of RAND (Research And Development) Corporation, in 1976. RAND is an American non-profit global policy think tank. RAND researchers examined teacher characteristics, the change process, teacher growth and student learning. RAND researchers based their methodology largely on Rotter's (1996) theory of locus of control: the extent to which teachers believed that they could control the reinforcement of their actions, that is, whether control of reinforcement lay within themselves or in the environment (Tschannen-Moran *et al.*, 1998). Armor *et al.* (1976) and Berman *et al.* (1977), as part of the RAND team, carried out research looking into literacy and reading interventions, in particular, in relation to teachers' efficacy. The researchers combined the score of the two items to determine one overall efficacy score. The first item asked: 'When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment'. This item highlighted the importance of external factors in learning outcomes or conversely the lack of power or control teachers over the students' home environment. The second RAND item asked: 'If I try hard, I can get through to even the most difficult or unmotivated students' (Berman *et al.*, 1977:137). This item emphasised the individuals and their control or power over the students' learning regardless of their environmental or other external circumstance (Tschannen-Moran *et al.*, 1998). This belief held by teachers, regarding the extent to which the teachers perceived they had the capabilities to affect student performance, was eventually identified as one of the most powerful concepts examined by RAND researchers in their investigation of teacher characteristics and student learning (Armor *et al.*, 1976).

2.5.3 Personal Efficacy – General Efficacy

The two dimensions of efficacy, first identified by the RAND items, might better be characterised as general teaching efficacy (the power of teaching to counteract any negative influences in the student's background) and personal teaching efficacy (the teacher's beliefs in their own teaching competence) (Woolfolk *et al.*, 1990). Ashton and Webb (1982, 1986) suggested two independent dimensions of teacher efficacy. They claimed that teachers' outcome expectations about the consequences of their teaching in general is called *teaching efficacy*. Additionally, they identified *personal efficacy* as teachers' personal ability to execute specific actions to achieve desired results. Tschannen-Moran, and Hoy (2001) argued that teaching efficacy can be either personal teaching efficacy (PTE) if it is more specific and individual or general teaching efficacy (GTE). The latter 'appears to reflect a general belief about the power of teaching to reach difficult children' (Hoy, 2000:7). In other words, 'personal teaching efficacy' refers to the teachers' beliefs in their own abilities to produce pupil outcomes whereas 'general teaching efficacy' refers to a teacher's beliefs about the abilities of teachers, in general, in their capabilities in producing pupil outcomes. While a teacher may have faith generally in teachers' ability to reach challenging children, he/she may be lacking confidence in his/her personal teaching ability. Thus, it seems likely that the two dimensions of efficacy are simply two different kinds of efficacy expectations (Woolfolk *et al.*, 1990). Gibson and Dembo (1984) defined personal efficacy as the equivalent to Bandura's efficacy expectation, as teachers' belief in their ability to bring about change in students. Teaching efficacy, the equivalent to Bandura's outcome expectation, is the teachers' belief that students can be taught despite external factors, such as their family environment.

Studies using both the Ashton and Webb and the Gibson and Dembo procedures have consistently found that these two dimensions are independent (Woolfolk *et al.*, 1990). A number of studies (Ashton & Webb, 1982, Anderson *et al.*, 1988, Gibson & Dembo, 1984; Hoy & Woolfolk, 1993) also supported the view that the two dimensions of efficacy can operate independently; while general teacher efficacy

considers factors external to the classroom such as social and environmental, personal teacher efficacy maintains a degree of focus on individual's perception at the level of individualistic characteristics.

Unlike Gibson and Dembo (1984) and Woolfolk and Hoy (1990), Soodak and Podell (1996) retained three factors of teacher efficacy, which they called teaching efficacy, personal efficacy and outcome efficacy. Soodak and Podell (1996) also believed that both personal and teaching efficacy need to be sufficiently high for teachers to judge regular class placements appropriate for atypical students. Their results showed that those regular educators who perceive themselves as not being able to influence student outcomes believed that students with special needs should not be placed in regular classrooms. A study by Ghaight and Shaaban (1999) revealed that personal and general teaching efficacy were not internally related whereas the categories of teaching concerns were all positively internally related. In fact, their study revealed that personal efficacy was inversely related to self-survival, task, impact, and total concerns whereas general efficacy was unrelated to any of the categories of teaching concerns.

The terms 'personal', 'general' and 'teacher efficacy' have been used by different researchers, in different studies, using different measurements to assess teacher efficacy or one of its aspects. Those terms are also often used interchangeably. Here lies a potential concern. Due to the variability of the terms, relevant research needs to be studied and results need to be interpreted with caution as the terms are different. A study, for example, that looked at a teacher's personal efficacy in relation to experience is not the same as a study that looked into general efficacy and experience. For the purposes of this study I accept that the term 'personal efficacy' is more closely related to the teachers' beliefs in their capabilities, as my purpose was to gauge their beliefs in their own capabilities as opposed to the capabilities of teachers in general.

2.5.4 Teacher efficacy model

Almost fifteen years after the personal teaching efficacy and general teaching efficacy terms were introduced, Tschannen-Moran, Woolfolk Hoy and Hoy (1998) came up with a new way to conceptualise the construct and proposed a cyclical model of teacher efficacy (Figure 2). This model presents the journey of the development of efficacy from the sources, which I elaborate later in this chapter, and through cognitive processes to the formulation of new efficacy belief which then follows the same cycle. According to this model, efficacy beliefs are translated into goals, effort and persistence which then inform teaching performance.

This model adds more detail to the ‘triadic reciprocal determinism’ model that was described earlier in the form of a triangle (Figure 1). Even though the model is in line with Bandura’s (1977) efficacy theory, it has been criticised with regards to content of the sources that affect efficacy and whether this has a positive effect on efficacy (Fives, 2003). It can be argued though that the content of the sources depends on the environment where the task is taking place. Also, as discussed below, not all the sources impact on self-efficacy in the same way or to the same degree. This model hence captures the agentic perspective as well as the role of the environment and should be interpreted differently for different tasks as self-efficacy is task specific.

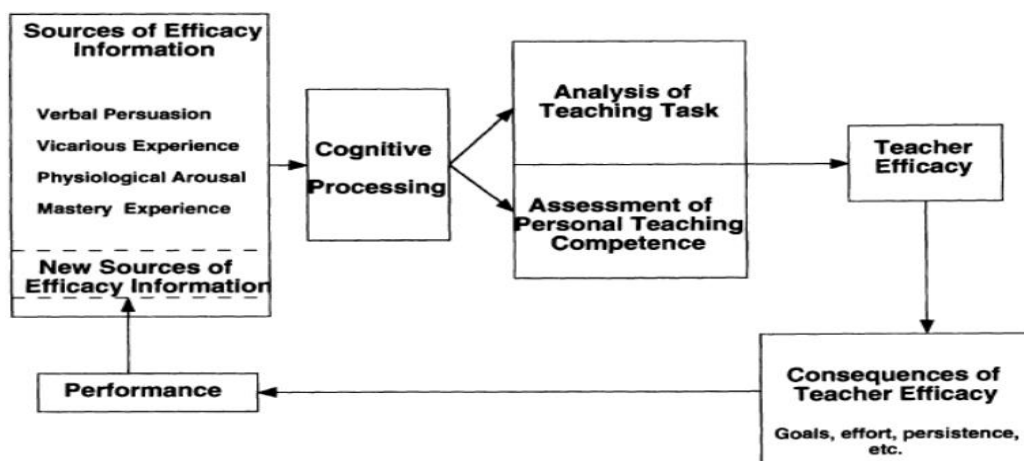


Figure 2 - Cyclical Nature of Teacher Efficacy

The influence of the environment and the cognitive process on self-efficacy and the bi-directional relationship has been well established. Below I explore the particular sources related to teacher efficacy.

2.5.5 Sources of efficacy

The major influences on efficacy beliefs are assumed to be the attributional analysis and interpretation of the four sources of information about efficacy described by Bandura (1997a) (Tscannen-Moran *et al.*, 1998). Bandura also reported that efficacy beliefs are developed through individual cognitive processing that uniquely weighs the influence of efficacy shaping information obtained through mastery experience, vicarious experience, social persuasion, and affective states.

According to Bandura (1998), in the self-appraisal of efficacy these different sources of efficacy information must be processed and weighed through self-referent thought. School processes contribute significantly to the four sources of efficacy beliefs ‘by influencing teacher cognitions about mastery experiences, by providing opportunities for vicarious experience, through persuasion, and by protecting teachers from the dysfunctional effects of negative emotional states’ (Ross *et al.* 2004:178). Understanding the potential sources of self-efficacy for teachers of students with disabilities such as autism can help identify factors to target in professional development activities and on-going teacher support initiatives (Ruble *et al.*, 2011).

Not all the sources have the same degree of impact on teachers’ self-efficacy. Mohamadi *et al.* (2011) who examined the relationship between sources, teacher self-efficacy and student achievement in high school teachers in Iran, found that factors of mastery experience, verbal persuasion and vicarious experience form teacher self-efficacy beliefs, but physiological states (i.e. coping with stress, fear and anxiety) do not have a significant effect on the formation of efficacy beliefs. They also found that achieving mastery experiences in teaching seemed to be the most

important factor. The way each of the source influence teachers' efficacy is described below.

Mastery

Mastery experiences are the most important sources of efficacy information according to Bandura (1995). Bandura posited that mastery experiences are the most effective way of creating a strong sense of efficacy, through 'acquiring the cognitive, behavioural, and self-regulatory tools for creating and executing appropriate courses of action to manage ever-changing life circumstances' (Bandura 1995:3). Bandura (1994) explained that performing a task successfully strengthens people's sense of self-efficacy. On the other hand, failing to adequately carry out a task or challenge can have a negative impact on and weaken self-efficacy. Woolfolk and Burke (2005) who studied novice teachers' efficacy, agreed with Bandura's assertion about the importance of mastery experiences and their influence on efficacy.

Efficacy beliefs are increased if a teacher perceives his or her teaching performance to be a success, which then contributes to the expectations that future performances will likely be proficient (Tschannen-Moran, *et al.*, 2007). Teachers who have had success managing students with challenging behaviour or severe needs in the past will recall their past success when dealing again with challenging behaviours. It is worth noting that, since efficacy is task specific, past mastery experiences will have to be very similar to new circumstances to have a positive impact. If a teacher has had successful experiences teaching language to verbal children with autism in the past it does not necessarily mean that the teacher will feel equally efficacious teaching language to non-verbal children with autism or to children who have additional challenging behaviour. However, research is needed to inform this area further.

Vicarious experiences

The advanced capability for vicarious learning is another distinctive human quality that receives considerable emphasis in social cognitive theory (Bandura, 1989) as

discussed earlier in this chapter. Vicarious experiences alter efficacy beliefs through the transmission of competencies and comparisons with the attainments of others. According to Bandura (1994:71), 'seeing people similar to oneself succeed by sustained effort raises observers' beliefs that they too possess the capabilities to master comparable activities to succeed'. By observing the successes and failures of others, people gather information that contributes to their judgments about their own capabilities. Woolfolk and Burke, (2005) conclude that the more closely the observer identifies with the model, the stronger the impact on efficacy. They also note, in line with earlier discussion about appropriate models, that when a credible model teaches well, the efficacy of the observer is enhanced, whereas when the model performs poorly, the efficacy expectations of the observer decreases.

Strong (2014) studied teachers of pupils with autism and her findings also supported the view that teachers need to witness evidence-based practices actually implemented, and then have opportunities for hands on practice, in order for their learning to occur. This is related to appropriate role models but again vicarious experiences are context related. Children with autism can be very complex and can also at times be selective about the people to whom they respond. Therefore, vicarious experiences may provide some encouragement to teachers for children with autism but they can not necessarily predict high efficacy beliefs.

Social Persuasion

Social persuasion also serves as an effective way to increase beliefs in one's capabilities, and more specifically, increase the likelihood of exerting and sustaining greater effort (Bandura, 1995). Bandura (1995) also asserted that people could in fact be persuaded to believe that they have the skills and capabilities to succeed. Receiving positive feedback and verbal encouragement from others helps people overcome their self-doubts and instead focus on putting their best effort on a task or action. The potency and impact of the persuasion may vary substantially and depends on the credibility, trustworthiness, and expertise of the persuader (Bandura, 1997a) or appropriate model as previously discussed.

Verbal persuasion is widely used because of its ease and availability. People are led, through suggestions, into believing that they can cope successfully with situations that have overwhelmed them in the past. Efficacy expectations induced in this manner are also likely to be weaker than those arising from one's mastery experiences because they do not provide an authentic experiential base for them. Verbal influence is aimed mainly at raising outcome expectations rather than at enhancing self-efficacy (Bandura, 1977b). Verbal persuasion has to do with verbal interactions that a teacher receives about his or her performance and prospects for success from important others in the teaching context, such as administrators, colleagues, parents, and members of the community at large (Mohamadi *et al.*, 2011). Comments on performance do not only come from more senior colleagues but those which do may have more impact on teachers' efficacy. If a teacher is told by a senior member who knows them and who this teacher trusts that they are good at teaching a new child with autism, it is likely that this comment will have a positive influence on the teacher's efficacy. However, if the teacher is not given the support and the training that they need to teach this child, verbal persuasion alone will have little effect on their efficacy.

Performance feedback that focuses on achieved progress underscores personal capabilities. 'Feedback that focuses on shortfalls highlights personal deficiencies' (Bandura, 1993:125). Teachers in schools and particularly outstanding schools are receiving feedback often as part of formal and informal observations. Therefore, the effect of verbal persuasion on self-efficacy is worth exploring.

Verbal persuasion is the least effective source of efficacy for the long term, although it might be effective in the short term. Verbal persuasions in isolation have little effect on raising efficacy if they are not accompanied by other factors to raise performance. Bandura (1977a) suggests that lacking the latter will 'most likely lead to failures that discredit the persuaders and further undermine the recipients' perceived self-efficacy. It is therefore the interactive, as well as the independent, effects of social persuasion on self-efficacy that merit experimental consideration'

(Bandura, 1977a:198) Social persuasion, though limited in its impact, may provide an ‘efficacy boost’ to counter occasional setbacks that might have instilled enough self-doubt to interrupt persistence (Woolfolk & Burke, 2005).

Emotional States

According to social cognitive theory, affect and efficacy beliefs come about reciprocally over time, meaning that positive affect is not only an antecedent of efficacy beliefs, but also a consequence. More specifically, Bandura (1997a, 2001) assumed that mood and efficacy beliefs are related both concurrently and predictively and that when people feel contented and satisfied, they are more likely to believe that they are efficacious; consequently, positive affect is also a source of efficacy beliefs. Psychological, physiological and emotional states, circumstances and stress levels can all impact on how a person feels about their personal abilities under certain circumstances. A person who becomes extremely nervous before beginning a task, a teacher before entering the classroom for instance, may develop a weak sense of self-efficacy in these situations.

Bandura (1994) comments that it is not the sheer intensity of emotional and physical reactions that is important but rather how they are perceived and interpreted. For example, feelings of tension can be interpreted as anxiety and fear that failure is imminent or as excitement—being ‘psyched’ for a good class (Woolfolk & Burke, 2005). By learning how to cope with and eliminate stress and improve their emotional state when facing difficult or challenging tasks, people can improve their sense of self-efficacy. This is an important point as teaching can be a stressful job and stress, as I discuss later, affects teachers’ efficacy and particularly those of children with autism. Powerful emotional arousal, such as anxiety, can effectively alter individuals’ beliefs about their capabilities. However, people may view a state of arousal as an energising factor that can contribute to a successful performance, or they may view arousal as completely disabling (Mohamadi *et al.*, 2011).

The impact of these sources relies a lot on the context and the teachers' interpretations. Based on the Cyclical Model of teacher efficacy as discussed earlier, sources of efficacy are influences and not determinants of teachers' efficacy. Those and other environmental factors are filtered through cognitive processes before developing into efficacy beliefs through a complex and unique process for each individual teacher.

So far I have discussed the development of the efficacy theory, the development of the teacher's efficacy concept and the sources of efficacy. I will now discuss teachers' efficacy and how it affects teaching behaviours and vice versa. I will then elaborate on the implications of high and low efficacy and discuss other predictors of teachers' self-efficacy. An important aspect of the following text is the research on the efficacy of teachers of pupils with autism. I have also highlighted the areas where evidence is limited.

2.5.6 Self-efficacy and teachers' attributes

Self-efficacy has an impact on a variety of domains and behaviours and affects how one acts in a personal and professional level. 'Teachers' beliefs in their ability to motivate and promote learning affect the types of learning environments they create and the level of academic progress their students achieve (Bandura, 1993:117)'. For teachers, self-efficacy increases persistence in working with challenging students, and has been shown to influence teachers' instructional practices, enthusiasm, commitment, and teaching behaviours (Skaalvik & Skaalvik, 2007). Related to their classroom behaviour, self-efficacy has been seen to affect teachers' effort, aspirations, planning, organisation and persistence in the face of setbacks (Chan, 2008). In terms of the effect on their perceptions about their jobs, the more one believes in their own capabilities, the greater will be one's job satisfaction (Caprara *et al.*, 2003).

Ross (1994, 1998) reviewed eighty-eight teacher efficacy studies and identified potential links between teachers' sense of efficacy and their behaviours. Ross

suggested that teachers with higher levels of efficacy are more likely to (1) learn and use new approaches and strategies for teaching, (2) use management techniques that enhance student autonomy and diminish student control, (3) provide special assistance to low achieving students, (4) build students' self-perceptions of their academic skills, (5) set attainable goals, and (6) persist in the face of student failure (in Woolfolk-Hoy & Bourke, 2005). Ashton, in 1984, carried out an analysis of the responses of a thematic appreciation test of middle school teachers. He identified eight dimensions that distinguish high from low efficacy teachers. The dimensions are listed below and are later discussed in relation to teachers of pupils with autism.

1. A Sense of Personal Accomplishment

Teachers with a high sense of efficacy feel that their work with students is important and meaningful; they feel that they have a positive impact on student learning.

Teachers with a low sense of efficacy feel frustrated and discouraged about teaching (Ashton, 1984) and they spend more time teaching the subjects they feel more efficacious about (Riggs & Enochs, 1990). Whether negative discrepancies between internal standards and attainments are motivating or discouraging is partly determined by people's beliefs that they can attain the goals they set for themselves. 'Those who harbour self-doubts about their capabilities are easily dissuaded by failure' (Bandura, 1989:47).

2. Positive Expectations for Student Behaviour and Achievement

Teachers with a high sense of efficacy expect students to progress and, for the most part, find that students fulfil their expectations. In addition to being related to student achievement, teachers' sense of self-efficacy has been associated with other student outcomes such as motivation (Midgley *et al.*, 1989).

Teachers with a low sense of self-efficacy expect their students to fail, to react negatively to their teaching effort, and to misbehave (Ashton, 1984). Teachers with a

low sense of teaching efficacy are more likely to doubt that any teacher or amount of schooling will affect achievement of low-achieving students and are less likely to persist in their efforts to teach students or to exert extra effort (Ashton & Webb, 1986; Gibson & Dembo, 1984).

3. Personal Responsibility for Student Learning

Teachers with a high sense of efficacy believe that it is their responsibility to ensure that children learn, and when their students experience failure, they examine their own performance for ways they might have been more helpful (Ashton, 1984). Through motivational processes, high self-efficacy teachers take responsibility for the outcome of actions, and attribute success and failure to efforts rather than to factors beyond their control (Abernathy-Dyer *et al.*, 2013). Higher efficacy teachers set more ambitious standards for themselves by focusing on student development rather than on content coverage (Brookhart & Loadman, 1993).

Teachers with a low sense of efficacy place the responsibility for learning on their students, and when they fail, they look for explanations in terms of the students' ability, family background, motivation, or attitude (Ashton, 1984). This comment is related to the earlier discussion about personal and general teaching efficacy in the sense that a teacher may have low personal self-efficacy but he/she may have higher beliefs in other teachers' abilities in teaching a particular child or subject. 'Teachers with a low sense of instructional efficacy spend more time than other teachers on tasks other than learning tasks, are quick to give up on slow learners, and reprimand them for their mistakes' (Bandura, 1997a:241).

4. Strategies for Achieving Objectives

Teachers with a high sense of efficacy plan for student learning, set goals for themselves and their students, identify strategies to achieve them (Ashton, 1984) and show willingness to implement innovative teaching methods (Guskey, 1988). They work from the idea that it is possible, using effective teaching practices such as

specific efforts and correct methods, to help students with learning difficulties to succeed and to have a positive effect on their lives (Bandura, 1997a) by also using hands-on teaching methods (Chan, 2008). When individuals and groups believe themselves capable of reaching given attainments, they are more likely to approach those goals with the creativity, effort, and persistence required to attain success (Goddard & Skrla, 2006: 218). In terms of assessment, Vitali (1993) found that highly efficacious teachers were more likely to rely on performance-based assessments of student work rather than on more traditional tests.

Teachers with a low sense of efficacy tend to lack specific goals for their students. They are uncertain about what they would like their students to achieve and do not plan teaching strategies according to identifiable goals (Ashton, 1984).

5. Positive Affect

Teachers with a high sense of efficacy feel good about teaching, about themselves, and about their students. They express greater enthusiasm and use intrinsic motivators and self-direction to enhance student development (Woolfolk & Hoy, 1990, Allinder, 1994). Teachers who feel confident that they can create a positive classroom social climate, facilitate students' friendship, are able to handle social problems and have been observed to provide better instructional support for students (Ryan *et al.*, 2015).

Teachers with a low sense of efficacy are frustrated with teaching and often express discouragement and negative feelings about their work with students (Ashton, 1984). These teachers give up more easily when confronted with difficult situations, are less resourceful, and frequently feel that students cannot learn because of the extenuating circumstances (Ashton & Webb, 1986, Bandura, 1997a, Goddard & Skrla, 2006).

6. Sense of Control

Teachers with a high sense of efficacy are confident that they are able to influence student learning. Teachers with high professional efficacy are more likely to set

higher standards for students, make students accountable for their behaviour, and persist until the students meet their goals (Dyer *et al.*, 2013).

Teachers with a low sense of efficacy experience a sense of futility in working with students (Ashton, 1984). Having low self-efficacy not only affects professional learning, but may also lead to depression (Bandura, 1993).

7. Sense of Common Teacher- Student Goals

Teachers with a high sense of efficacy feel that they are involved in a joint venture with students to achieve shared goals (Ashton, 1984). They focus on student collaboration and interaction as opposed to drill and practice methods (Woolfolk *et al.*, 1990).

Teachers with a low sense of efficacy feel that they are engaged in a struggle with students whose goals and concerns are in opposition to theirs (Ashton, 1984). Woolfolk and Hoy (1990) found that teachers with low efficacy relied on extrinsic motivators and punishment.

8. Democratic Decision-Making

Teachers with a high sense of efficacy involve students in decision-making regarding goals and strategies for achieving goals (Ashton, 1984). With respect to interactions with students, teachers with higher self-efficacy tend to be more patient, make better use of class time, criticize students less, encourage student autonomy and responsibility, and persist longer when dealing with challenging students (Gibson & Dembo, 1984). A study by Woolfolk, Rosoff and Hoy (1990) with language teachers in the U.S.A. found that higher levels of self-efficacy predicted greater autonomy and less controlling behaviour with students, compared to less self-efficacious teachers who were more authoritarian in their classrooms. Teachers with stronger beliefs in their ability to engage their students in learning, and to a lesser extent, manage students' misbehaviour and classroom activities, reported not

only higher job satisfaction and lower burnout (Emotional Exhaustion, Personal Accomplishment), but also less frequent symptoms of illness (Wang *et al.*, 2015).

Teachers with a low sense of efficacy impose their decisions regarding goals and learning strategies on students without involving them in the process of decision-making (Ashton, 1984).

Bandura (1989:47) highlighted that ‘those teachers who are assured of their capabilities intensify their efforts when they fail to achieve what they seek and they persist until they succeed’. He also mentioned that efficacy can fluctuate. It seems logical that when the sources of efficacy change or the environment changes, this can have an affect on efficacy. To point out the varying nature of self-efficacy Bandura (1989:47) noted that the standards people set for themselves at the outset of an endeavour are likely to change, depending on the progress they are making. He also added that people may maintain their original standard, lower their sights, or adopt an even more challenging standard. Thus, the third constituent, ‘self-influence, in the on-going regulation of motivation, concerns the readjustment of personal standards in light of one's attainments’ (Bandura, 1991).

High self-efficacy leads to or is correlated with positive outcomes for teachers, their teaching and student learning, whereas low efficacy is related to a lower quality of teaching and learning. However, Wheatley (2002) identified a number of benefits for teacher learning and educational reform that might follow from having doubts about one’s efficacy. These include the possibility that doubts might foster reflection, motivation to learn, greater responsiveness to diversity, productive collaboration, and change provoking disequilibrium. Boulden *et al.* (1998) had also previously asserted that low efficacy may improve the quality of classroom management. However, persistent high efficacy perceptions in the face of poor performance can produce avoidance rather than positive action.

The impact of high and low self-efficacy on teachers' behaviours and pupil outcomes have been documented mostly for mainstream education teachers. However, these attributes are rather generic and could be relevant to all teachers. A notable difference is in the way those attributes are interpreted is related to the context the teaching is taking place taking into account the influence of the environment on efficacy. Teaching pupils with severe special needs and autism includes different demands, expectations and decisions compared to teaching normally developing children. Expectation and achievement are seen differently and they are based on each individual child.

Research on special needs teachers' efficacy has also revealed that the overall efficacy scores were found to be high which is positive even though special education teachers have been found to be more susceptible to developing high levels of occupational stress than general education teachers, as discussed earlier. Carlson *et al.* (2002) conducted a nationwide study in the USA of teachers who taught students with special needs. They found that overall special education teachers reported high efficacy. Paneque and Barbetta (2006) examined the teacher efficacy of special education teachers of English language learners with disabilities by surveying 202 elementary special education teachers and found overall high efficacy scores. Garberoglio, Gobble, and Cawthon (2012) studied 296 teachers to examine the relationship of teacher and school characteristics with teachers' sense of efficacy in 80 different deaf education settings in the USA. Deaf education teachers reported high overall efficacy beliefs but significantly lower efficacy beliefs in the area of student engagement than in instructional strategies and classroom management (Garberoglio *et al.*, 2012).

Pupils with autism learn in different ways and their learning can be affected by secondary factors including challenging behaviour. Teachers of children with autism may have to persevere more, try a range of different strategies in order to see progress in their students. Also progress may be very different from one child to the other. Including children with autism in decision making can be different? as some

of them have serious communication and language impairments. The responsibility for student learning extends beyond academic skills and involves managing behaviour and teaching life skills.

Self-efficacy is task specific and the attributes of highly efficacious teachers present in a very different way from mainstream teachers in relation to other factors affecting pupils' learning. There has been considerably less literature on the efficacy of special needs teachers and even less on teachers for children with autism, to which this study aims to contribute

2.6 Teacher's Collective efficacy

Teachers' collective efficacy has been examined less frequently in relatively few studies (Pajares, 1997). It has even been deemed a 'neglected construct' (Goddard, 2001:467). Collective efficacy beliefs typically reflect individual teachers' perceptions of group-level attributes; that is, individual teachers are asked to judge the capabilities of the group or groups to which they belong (Klassen & Chiu, 2010). Collective teacher efficacy refers to teachers' belief about the collective capability of a group of teachers to influence student achievement (Goddard *et al.*, 2004). It is important to make the distinction that teacher collective efficacy is measured by teachers' perceptions of their school's collective efficacy rather than the 'schools' sense of collective efficacy as an aggregate of teachers' group-referent efficacy perceptions' (Ashton & Webb, 1983:7). Skaalvik and Skaalvik (2007) suggested that one should attempt to raise teachers' competencies collectively through school development.

Efficacious people are quick to take advantage of opportunity structures and figure out ways to circumvent institutional constraints or change them by collective action (Bandura, 1997a). The assumption is that when teachers as a group in a school believe that the staff as a whole can be successful, they will be more likely to persist in their own personal efforts to achieve such success (Bandura, 1963).

Collective efficacy perceptions are higher in school settings where teachers have greater ownership of school direction in areas such as shared school goals, school-wide decision making, and making plans in line with school needs (Garberoglio *et al.*, 2012). The stronger the perceived collective efficacy, the higher the group's aspirations and motivational investment in their undertakings, the stronger their staying power in the face of impediments and setbacks, the higher their morale and resilience to stressors, and the greater their performance accomplishments (Bandura, 1986). A Collective sense of efficacy leads to a more optimistic conception concerning the management of future situations and is connected to a group's behaviour (Urton *et al.*, 2014). This is particularly important for teachers of children with learning difficulties and challenging behaviour. Teachers work closely in teams to meet the needs of the children; their jobs are very demanding. At the same time, children with autism may have setbacks in their progress. It is therefore important that collective efficacy is high to influence staff to remain positive through the challenges of their job.

Staff with high collective efficacy create energising environments, while staff with low collective efficacy create a depressing environment for students and themselves (Bandura, 1993, 2001). Sorlie and Torsheim (2011) found that teachers reported fewer problems in their classroom when there was a relatively high collective efficacy among the teachers in the school. Collective efficacy leads to a group having high effort, motivation, morale, and resilience; they persevere in the face of resistance and perform at high levels (Bandura, 2001). They believe that they can overcome environmental issues in the process of helping students to learn (Goddard *et al.*, 2000). High levels of perceived collective efficacy have also been associated with a robust sense of purpose that helps groups see setbacks as temporary obstacles to be overcome rather than evidence confirming their inefficacy (Goddard and Skrla, 2006).

Collective efficacy also serves as a job resource that mediates the effect on stress from student behaviour on job satisfaction (Klassen, 2010). Klassen (2010) studied

951 teachers from elementary and secondary schools in Canada and found that teacher collective efficacy for student discipline mediated the influence of job stress from student misbehaviour on job satisfaction, and the relationship was consistent across groups. This is relevant to an earlier comment regarding managing challenging behaviour of children with autism. Individual teachers make a difference in student behaviour, but the collective efforts of teachers have a positive influence on students (Tschannen-Moran & Barr, 2004). This is important to note as teachers of pupils with autism work closely in teams as mentioned in the introduction chapter.

Bandura (1977) demonstrated a positive effect of collective efficacy on student achievement regardless of socioeconomic status, race, or ethnicity. A series of research projects examining the relationship between collective efficacy and student achievement (e.g. Goddard *et al.*, 2000; Goddard, 2001; Goddard & Goddard, 2001, Goddard, Hoy & Woolfolk-Hoy, 2000; Bandura, 1993; Klassen *et al.*, 2008 in Klassen & Chiu, 2010) found a significant relationship between schools' student achievement and collective efficacy levels. A robust sense of collective efficacy fosters student achievement by creating a school culture characterised by a norm of, and an expectation for, sustained effort and resilience in the pursuit of school goals for student growth and development, particularly academic achievement (Goddard and Skrla, 2006). The same researchers, Goddard *et al.*, (2001:501) in an earlier study found that 'a one unit increase in a school's collective teacher efficacy scale score is associated with an 8.62 point average gain in student mathematics achievement and an 8.49 point average gain in reading achievement. Student scores were higher in schools where the teachers reported the highest levels of collective efficacy. In an experiment in Virginia, Tschannen-Moran, and Barr (2004) found that students in schools with high collective efficacy were more likely to improve their standardised test scores than students in schools with low collective efficacy teachers.

On the other hand, the long-term consequences of a depressing or energising event for school success are partly shaped by the affective state(s) that individuals

experience in response. Strong emotional responses can either support or undermine an organisation's ability to tolerate pressure in the face of crisis. Where collective efficacy beliefs are lower, cultures of blame and resentment can emerge in response to disappointing performance feedback (Goddard & Skrla, 2006).

2.7 Relationship between self-efficacy and collective efficacy

Collective efficacy and self-efficacy are two distinct but related constructs (Kurt *et al.*, 2012). It has been hypothesised that collective efficacy is related to self-efficacy since the perceived sense of group efficacy is related to the individual perceived efficacy of the members of the group (Bandura, 1997a). Goddard and Goddard (2001) demonstrated that teachers' sense of efficacy is not uniform among schools, and that the variation can be explained by collective teachers' efficacy, which they also found to be the sole significant factor for predicting differences in teachers' self-efficacy at the school level.

Garberoglio *et al.*'s (2012) study results showed that the contextual variable of teachers' perceived collective efficacy of the educational setting may be the best predictor of teachers' efficacy beliefs, above and beyond any individual characteristics of the teachers, Lev and Koslowsky (2008) found that collective efficacy was positively associated with self-efficacy, with teacher role moderating the association of two components of self-efficacy: social and management. This association was also supported by the findings of Aliakbari and Darabi (2013) who asserted that when the collective beliefs of the staff to carry out their tasks are high, the individual efficacy of teachers is also higher, thus, affirming a symbiotic relationship between the two. Caprara *et al.* (2003) however, suggested that the interdependent relationship between teacher self-efficacy and collective efficacy needs to be further investigated as the impact of these two factors on other psychological constructs warrants further investigation. This statement is also in line with the cyclical model of causation which was described earlier in this chapter and suggested how new efficacy beliefs further influence physiological and cognitive states of the individuals. Furthermore, this can be linked to mastery experiences and

the extent to which the outcomes of the efforts of teams further affect their collective efficacy or individual self-efficacy of each of the team members.

Teachers' collective efficacy on its own as well as in relation to self-efficacy have not been adequately explored. As shown above, there is evidence that the two constructs interact and influence each other. If we see the team as the environment in which a teacher operates then changes in the dynamic of team or the beliefs in the capabilities of the team, would influence teachers' self-efficacy and vice versa based on the model of reciprocal causation.

2.8 Teacher's self-efficacy and teachers' parameters

The literature has identified a number of areas which affect teachers' self-efficacy and collective efficacy and are elements of teachers' professional experiences. These are achievement, experience, stress and burnout, training as well as leadership. They could also be part of the broader categories of sources of efficacy as it was discussed earlier in this chapter and they are also part of the environment and cognitive processes. In this sense, they have an influence on teachers' efficacy. It is important that they are explored in details in order to gain a better understanding of their reciprocal relationship with teachers' efficacy. Below I elaborate on these parameters.

2.8.1 Efficacy and achievement

Early in the efficacy research, Berman *et al.*'s (1977) study showed teacher efficacy to be the best predictor of improved student performance. Woolfolk and Hoy (1993) have also advocated that teachers' beliefs about the expectations of student academic achievement are correlated with teachers' sense of efficacy. A year later Ross (1994) reported that teacher's self-efficacy is one of the few individual teacher characteristics that reliably predicts teacher practice and student outcomes. Both Berman and Ross, above, support the view that self-efficacy *predicts* students' performance or outcomes which is a rather powerful statement to make. It is common to discuss that efficacy can provide an indication of an outcome or behaviour but rarely that it

predicts. This latter point was something that Bandura was also criticised about as it was discussed earlier. More evidence suggests that teachers' sense of self-efficacy exerts significant influence on student achievement by promoting teaching that enhancing learning (Goddard & Skrla, 2006). Recently, the findings of Klassen and Tze (2014) also confirmed the positive effects of teachers' self-efficacy on student achievement. Their study suggested that: (a) teachers' self-efficacy is strongly associated with evaluated teaching performance, (b) teachers' self-efficacy is modestly but significantly associated with the achievement levels of students, and (c) teachers' personality is modestly but significantly related to evaluated teaching performance. Their results suggest that self-efficacy is indirectly related to student achievement through teachers' performance, which could then lead to better outcomes for the students. This view argues that the relationship between teachers' self-efficacy and student achievement is indirect and that learning and achievement are influenced by classroom quality (Ashton & Webb, 1986; Goddard & Goddard, 2001; Guo *et al.*, 2014).

A number of research studies in the area of special education (e.g. Allinder, 1995; Guskey & Passaro, 1994; Schwarzer & Hallum 2008; Soodak *et al.*, 1998 etc.) have associated higher levels of efficacy with better quality of teaching and better learning outcomes for children with special needs, which is largely similar to the outcomes of research for mainstream teachers. Indirect relationships between self-efficacy and achievement have also been found in studies in the field of special education. The literature on teaching efficacy in the context of working with low-achieving students or students at risk does not give us a clear picture of the relationship between students' achievement and teachers' sense of efficacy in these populations, but it appears that experience in teaching may influence this relationship (Garberoglio *et al.*, 2012). Guo *et al.* (2014) carried out a study that described the self-efficacy of early years special education teachers and they found that teachers' self-efficacy was not related to children's gains in language and literacy. They also found that associations between teachers' self-efficacy and the language and literacy gains of children with language impairment were significantly, negatively moderated by

classroom quality. Paneque and Barbetta (2006) found positive correlations between proficiency in the language of students and teacher efficacy. It is important to consider the quality of teaching while discussing the relationship between self-efficacy and achievement. A teacher may feel highly efficacious in one or more areas but if their teaching is not of high quality or appropriate to the needs of the students then it is unlikely that it will lead to progress and positive outcomes.

Children with special educational needs and those with autism often have complex needs and associated behaviour difficulties. Therefore, achievement can be also influenced by other factors associated with the type and severity of the disability outside the teacher's control and irrespective of the quality of teaching. Another parameter to take into account, especially in the UK, is that the progress and achievement of children with special educational needs, especially those functioning below National Curriculum Level 1 is not as well defined and may be challenging to measure. What constitutes good progress for children with special needs is a concept under discussion amongst the educational communities and the ever-changing government guidelines. Taking into account those two issues, the complexity of needs and the ambiguity in measuring progress and achievement, trying to relate teachers' self-efficacy with achievement of children with autism is not as straightforward and could potentially face reliability challenges. For the purposes of this study I relied on Ofsted judgements for whole school achievement and on the participants' judgements of their pupils' progress and achievement.

2.8.2 Efficacy and Experience

Teachers' self-efficacy has also been associated in the literature with the length of teaching experience. Bandura's theory of efficacy suggests that efficacy may be most malleable early in learning, thus the first years of teaching could be critical to the long-term development of teacher efficacy (Woolfolk and Burke, 2005). A number of researchers have explored the association between efficacy and years of experience in mainstream education (Ross *et al*, 1996; Goddard & Skrla, 2006; Wolters & Daughterty, 2007, Ghaight & Shhaban, 1998 etc.) as well as in special

education (Levi *et al.* 2013; Garbergoglio *et al.*, 2012; Yeo *et al.*, 2008, Pebbles & Mendaglio, 2014, Dimopoulou, 2014). Within the parameter of experience, particular emphasis has been also laid on the development of efficacy in novice teachers (Woolfolk-Hoy & Burke, 2005; Tchannen-Moran & Hoy, 2007).

In terms of the positive association between teachers' self-efficacy and experience, Ross *et al.* (1996) found evidence in their study of 92 high school teachers that greater teaching experience was associated with higher levels of teachers' sense of self-efficacy. Wolters and Daughterty's (2007) results from 1024 teachers indicated that more experienced teachers are likely to know more about the content they teach, have different attitudes about their students, and think and behave differently in the classroom when compared with their less experienced peers. Goddard and Skrla (2006) found a positive relationship between years of experience and collective efficacy. Their findings revealed that experienced teachers (those with more than 10 years of teaching experience) also reported levels of perceived collective efficacy that are slightly higher than those of their less experienced colleagues. Although there is an extensive amount of literature linking teachers' efficacy and years of teaching experience, for the purposes of this review research relevant to special educational needs teachers will be presented.

In the field of special education, teachers' beliefs in their ability to provide meaningful help to their students with learning difficulties may be related to teaching experience (Jones *et al.* 2013). This assertion has been evidenced by the results of a study by Pebbles and Mendaglio (2014) which showed that prior experience with people with exceptional needs was associated with higher levels of self-efficacy. A research study by Yeo *et al.* (2008) with teachers in Singapore who teach low-achieving students showed that as teachers gain experience, they report higher levels of teacher self-efficacy. The same researchers a few years later found that years of teaching experience was related to both self-efficacy and sense of coherence.

Garberoglio *et al.* (2012) examined the efficacy of teachers of deaf children and found that overall scores were higher for more experienced teachers and novice teachers. Level of experience did not account for a significant amount of the variability of teachers' sense of efficacy scores. Leyser *et al.* (2011) examined the impact of three variables on the self-efficacy of 992 general and special education pre-service teachers in Israel. The main effect for years of pre-service education was only in efficacy for social relations. Kaner (2010) investigated efficacy beliefs of general and special education teachers in Turkey. Similar to Leyser *et al.*, experience was associated with only one aspect of self-efficacy. Kaner (2010) found that for the length of teaching experience statistically significant differences were only in relation to using computer technology. Teachers with more than eleven years experience had higher scores in using computer technology than those with fewer than ten years of experience. Aliakbari and Darabi's (2013) findings revealed significant association between teachers' experience and efficacy of their classroom management. Ghaight and Shhaban (1998) investigated 292 Lebanese teachers from diverse school backgrounds with a wide range of teaching experience. Their results revealed that beginning teachers and those with a low sense of personal efficacy were concerned about the task of teaching and the impact they make as teachers more than their highly experienced and more personally efficacious counterparts. Hofman and Kilimo's (2014) results showed no relationship between teachers' self-efficacy towards pupils with disabilities and working experience in inclusive education.

The effect of experience on the efficacy of special needs teachers varies. The fact that experience is related to specific aspects of teaching may be also linked with the fact that efficacy is task specific. Another element to take into account in relation to experience and efficacy of teachers of children with special needs is the variety of the spectrum of needs of the children. Teachers who are experienced and highly efficacious in teaching children with specific learning difficulties may not feel as efficacious if they teach children with different types of special needs or with associated behaviour difficulties.

2.8.3 Efficacy and stress

Another area that teachers' self-efficacy has been associated with is job satisfaction, stress and burnout. According to Bandura (1998) people's efficacy influences whether their thought patterns are self-hindering or self-enhancing, and how much stress and despondency they experience during transaction with the environment.

Klasseen and Chiu (2010) support that one's objective teaching ability does not predict job satisfaction directly, but rather those perceptions of teaching-related self-efficacy lead to greater positive affect and job satisfaction. Caprara *et al.* (2003:823) labelled job satisfaction a 'decisive element' that influences teachers' attitudes and performance, and he suggested that self-efficacy and collective efficacy both contribute to teachers' job satisfaction.

Special education teachers are more susceptible to developing high levels of occupational stress than general education teachers – a fact that in some cases may lead to burnout (Wisniewski & Gargiulo, 1997 in Platsidou, 2010). Viel-Ruma *et al.* (2010) surveyed 104 special educators and found that teacher self-efficacy had a direct effect on job satisfaction and that many special educators leave their positions in their first few years in the field. Findings of research undertaken amongst teachers from various majors have shown that special education teachers who were trained to work with students with specific impairments felt more exhausted, stressed and depersonalised compared to teachers graduating from other departments (Küçüksüleymanoğlu, 2011). Billingley (2004) reviewed the literature on special education teachers. A decade of research shows that teacher and work factors are critical to special educators' job satisfaction and their subsequent career decisions. In 2008, Platsidou studied a sample of 127 Greek special education teachers at the primary school level. Her results indicated that teachers reported average to low levels of burnout although they reported moderately high levels of satisfaction with their job, the principal, and the school organisation as a whole; they also reported average satisfaction with work conditions and low satisfaction with prospects of promotion and pay. Four factors were identified in the job-related stress factors:

teaching in a multi-category classroom, programme organisation and implementation, assessment of students, and collaborations with other special education experts and parents. The special education teachers perceived none of these issues as particularly overwhelming. Moreover, few significant effects of age, gender, and family status were identified.

Burnout and attrition has not been adequately explored in teachers for children with autism. Ruble *et al.* (2011) found that physiological and affective states, as examined by stress and burnout, would be associated with self-efficacy. Interestingly, the correlation with burnout was significant for only one of the three self-efficacy subscales (i.e., class- room management). A couple of years later Ruble *et al.* (2013) also found a negative relationship between teacher self-efficacy and teacher burnout. Again correlations between burnout and self-efficacy for gaining support from both colleagues and administrators were small and non-significant. Teachers who reported more confidence in their classroom management abilities reported lower levels of burnout. Sarıçam and Sakız, (2014) found negative relationships between the burnout and teacher self-efficacy scales of mainstream and special education teachers, except for the relationships between personal accomplishment and domains of self-efficacy which were correlated positively. They assumed that work-related stress experienced by special education school staff might be associated with their beliefs in their educational competence (Saricam & Sızak, 2014).

Boulden *et al.* (1998) had also previously asserted that low efficacy may improve the quality of classroom management. Children with autism can present with challenging behaviour and their difficulties in communication can make classroom management very challenging and lead to stress and burnout at it was mentioned earlier in the first chapter. Thus, it is not a very surprising result that lower self-efficacy in classroom management can result to burnout. The evidence is limited and this study is looking to further contribute to this specific area.

2.8.4 Efficacy and training

Teachers need specific skills to meet students' special needs and accordingly, help them develop learning strategies and empower their efforts to perform different academic tasks (Hyman, 2012). Teachers' efficacy beliefs in their capabilities of teaching and impacting on learning are also associated with their skills. It would be almost common sense to argue that more training and professional development will lead to increased levels of self-efficacy. Leyser *et al.* (2011) and Aðalsteinsson *et al.* (2013) support that training is associated with self-efficacy. Leyser *et al.* (2011) found that student teachers with some training had significantly higher scores than students with no training. Tillema and Imants (1995) noted that highly efficacious teachers benefited more from professional development because of their willingness to learn and try new instructional practices, thereby increasing their level of efficacy. Levi *et al.* (2013) found that teachers with special education training had higher levels of hope and self-efficacy. This is also supported by Jennett *et al.* (2003) who found that for teachers of pupils with autism training in an autism-specific intervention facilitates pedagogical self-efficacy.

Special needs teachers and teachers of pupils with autism often have to deliver specific teaching strategies for which they need to receive training. They also often require behaviour management related training. In order to meet the needs of the children, teachers are required to receive training which in turn, if appropriate, will equip them better with the skills required and hence increase the chances for them to feel more efficacious. It is important though that the training is relevant to their students. Training on picture exchange communication system (PECS) which augments the communication of non (functionally) verbal children with autism may not be appropriate for teachers who teach verbal children with moderate learning difficulties. Also, in line with vicarious learning, for training to have an effect of efficacy the teachers need to trust the content as well as the professionals delivering the training.

2.8.5 Efficacy and Leadership

The efficacy of school leaders has been explored less frequently than the efficacy of teachers; however it influences the leaders themselves as well as the staff they lead. Holding a leadership position may be also accompanied by additional feelings of pressure. Ryan (1999) noted that those identified as teacher leaders are not only respected by peers but are perceived as teachers who volunteer and accept responsibility for tasks. Fast, Burris and Bartel (2014) pointed out that all managers face remarkable pressure to demonstrate personal efficacy—that is, to possess the skills and abilities necessary to be effective and influential in the context of their managerial roles. Fast and Chen (2009) pointed out that individuals in high-power roles are expected to exhibit greater merit, in the form of competence, than those in less-powerful roles and, moreover, the powerful tend to internalize this expectation as a standard for the self.

Leithwood and Jantzi (2008) also highlighted the impact of leadership on leaders' efficacy by asserting that those in leadership roles who relate self-efficacy to ability as an inherent capacity, will experience an eroding sense of efficacy as difficulties arise, become more erratic in their problem solving, and lower their aspirations for the individuals or groups in their organization. Another important outcome of the aforementioned study was that leader efficacy did explain significant variation in annual student achievement scores.

Teacher leadership in an atmosphere of collaboration has been linked throughout the literature to teacher collective efficacy (Wahlstrom & Louis, 2008). Ross and Gray (2006) asserted that the relationship between leadership and efficacy matters because of the well-established connection between collective teacher efficacy and student achievement. Abdolhamid and Vali (2015) also found that increased collaborative style in the principal leads to increasing teachers' self-efficacy. Wahlstrom and Louis' (2008) review also suggested that leadership practices that share power are credited with creating greater motivation, increased trust and risk taking, and building a sense of community and efficacy among its members. Angelle and Teague

(2014) examined the relationship between teacher perceptions of the extent of teacher leadership in their schools and the extent of collective efficacy. Findings from their study indicated a clear and strong relationship between collective efficacy and the extent of teacher leadership. However, the researchers claimed that their study may be limited in that teacher leaders may have a greater tendency to complete a survey on teacher leadership than teachers who do not take on leadership roles.

While research has been conducted exploring leadership and teachers' efficacy there is no evidence to suggest the relationship between teacher leaders' self-efficacy in the field of autism. This study will explore the views on teachers with leadership positions to add knowledge that is lacking in this area.

Achievement, experience, stress and leadership are all areas that relate to teachers' self-efficacy beliefs. They are part of the reciprocal causation (Figure 1) and the cyclical model of efficacy (Figure 2) that I presented earlier. They contribute to the shaping of self-efficacy and then through a cycle and continuous development of self-efficacy they affect the generation of new efficacy beliefs in teachers. The progress and achievement of children with autism are not always linear, there may be small or at times children may regress. Teachers and leaders have to work in teams, manage and motivate staff. These create environments where prior experience may or may not be relevant. This also comes with additional pressure which may result in stress. The areas that were explored in this section have varied effects on teachers' efficacy, which are further influenced, by personal traits and specific teaching situations. This study explored the views of the teachers with regards to these areas and teachers' self-efficacy.

So far this chapter has considered the efficacy of teachers in mainstream education and special education. Special education is a large area, which covers teaching in special schools, teaching in units within mainstream schools or providing additional support in mainstream classrooms for pupils who need it because they have been identified as having special educational needs. There is some research on the

efficacy of teachers with special needs. However, there are still areas where evidence is limited. Classroom management and challenging behaviour are common challenges in special needs classroom and research exploring the efficacy of teachers in relation to these aspects would benefit from more exploration.

The following section provides an overview of the research on teachers of pupils with autism. It also presents some of the challenges teachers with autism face. Chapter 1 presented the educational context with regards to children with autism and highlighted issues regarding teaching and learning of children with autism. It is essential to understand the characteristics of the environment of teachers of pupils with autism, as well as teachers' attitudes towards children with autism. Earlier in this chapter I discussed the triadic reciprocal causation model and how environment, behaviour and personal factors influence teachers' efficacy. Discussing the environment, the attitudes and the challenges involved in teaching children with autism is important in better understanding the self-efficacy and collective efficacy of those teachers.

2.9 Teachers of children with autism

More than ever before, classroom teachers are required to understand exceptional needs, manage a diverse classroom, make appropriate accommodations for individual students, and collaborate with parents, staff, and other paraprofessionals (Peebles & Mendaglio, 2014). Teachers play an increasingly prominent role in many aspects of the care and management as well as the education of their pupils (Howlin, 1998). I think it's a problem quoting a 1998 report in this context. Despite the importance of teachers' attitudes towards children with special needs, there has been a lack of empirical research on teachers' attitudes towards autism (Park & Chitiyo, 2011, Helps *et al.*, 1999). This section addresses the attitudes of teachers who teach children with autism both in special and mainstream education as this study included teachers in both types of school

There are a some of studies, most based in the USA, which looked into the attitudes of teachers, both in mainstream and less so in special education, towards children with autism. Park and Chitiyo's (2011) study demonstrated that most of the teachers had positive attitudes towards children with autism that teachers' positive attitudes were influenced by their gender, age, school levels and workshop experiences. The researchers also found that there was no significant difference between general education and special education teachers in their attitudes to children. In contrast, McGregor and Campbell (2001) explored the attitudes of teachers in Scotland and found that specialist teachers were more positive, although they acknowledged possible disadvantages for both groups of children and stressed that the success of integration depends on the individual child. Whinnery *et al.* (1991), on the other hand, found that mainstream teachers viewed themselves as less competent to cope than specialist teachers. There appears to be no general consensus regarding the attitudes of teachers toward children with autism. Children with autism are a challenging group to teach. It what? depends on the individual teacher, their background and as I explore later, their level of efficacy which may also fluctuate. In any case, Hannah and Pliner (1983) noted that teachers who have unfavourable attitudes towards children with autism may have detrimental impacts on those children.

Teaching children with autism comes a with challenges . Skill set, patience, as well as support and collaboration are required to better equip teachers to overcome those challenges. The field of special education has experienced high numbers of teachers who leave due to the demands of the job (Billingsley, 2004) as was also mentioned earlier while discussing stress and burnout. Eman and Farrel (2009) explored some of the tensions that teachers in mainstream schools may experience with their pupils with autism as well as how these tensions may shape their views of support arrangements for those pupils. Their results suggested that the tensions that arise for teachers due to the inclusion of pupils with autism were inherently shaped by the autism impairments, particularly those pertaining to the lack of social and emotional understanding. Lindsay *et al.* (2013) interviewed thirteen teachers who had

experience teaching children with autism and reported several challenges, including: understanding and managing behaviour; socio-structural barriers (i.e., school policy, lack of training and resources); and creating an inclusive environment (i.e., lack of understanding from other teachers, students and parents). Teachers recommend that more resources, training and support are needed to enhance the education and inclusion of children with autism.

Quality teaching tailored to meet the needs of this population is a critical factor in students' achievement (Talib & Paulson, 2015). Prior studies showed limited knowledge and inaccurate beliefs about autism among special and general educators (Helps *et al.*, 1999; Mavropoulou & Padelidou, 2000). McConkey and Bhilgrri (2003) also found that general educators felt they lacked the knowledge and skills necessary to work with students with autism. It is crucial that educational training systems are able to (a) provide on-going support in the form of relevant advice and guidance for teachers in the classroom, and (b) establish effective training schemes for special needs teaching, such as are already well developed for teachers of children with sensory impairments (Helps *et al.*, 1999).

In order for teachers to be able to meet the needs of the children and overcome the challenges of their profession, they require relevant skills, knowledge and professional development through support and training. So far, in this thesis, I have discussed the characteristics and impairments of children with autism in the areas of communication and interaction. I provided an overview of the education system in the UK for children with special needs and autism as well as the role of the teacher. The discussion of Bandura's theories outline the construct of efficacy. The cyclical model of teachers' efficacy, which included the sources, the environment and cognitive processes was used as a reference on a number of occasions to try and explain the way different sources and parameters of the teaching profession affect teachers' efficacy. The literature suggested that self-efficacy and more so collective efficacy have not been broadly explored in special education and in relation to autism in particular. It was thought important to present and discuss the literature on

efficacy of mainstream and special needs teachers prior to the literature on the efficacy of teachers of pupils with autism who were the focus of this study. Even though teaching children with autism is not the same as mainstream or general special needs teaching, in all types of schools teachers are dealing with similar issues such as managing behaviour, differentiating teaching, working in teams, dealing with paperwork and workload. Hence exploring efficacy in mainstream and special education provided a theoretical framework and a point of reference in order to address the efficacy of teachers of pupils with autism.

2.10 Efficacy of teachers of pupils with autism

The research on efficacy for teachers for students with autism is extremely limited. At the present time only six studies identified explored? efficacy of teachers of pupils with autism. One further study explored the self-efficacy of social workers for individuals with autism. Only one of these studies, which was in fact a publication of the preliminary data of this study, was conducted in the UK. Five studies took place in the US and one in Hong Kong. Six of the studies used a quantitative study design and only one employed a mixed methods design. These studies are also presented in a table (Appendix 8). Apart from my own preliminary study, Dimopoulou (2014), no study was found to explore collective efficacy and self-efficacy of teachers of pupils with autism. There is an obvious lack of research in the UK for efficacy and collective efficacy in particular and also a lack of qualitative studies to delve deeper into the views of teachers of pupils with autism.

The first study to explore the efficacy of teachers working with autism was carried out by Jennett *et al.* (2003). The researchers found that teaching efficacy scores varied according to the levels of commitment to one of two specific teaching philosophies or treatments for educating students with autism (Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH) or Applied Behaviour Analysis (ABA). The findings showed that the Personal Efficacy scale scores correlated positively with commitment scores for both TEACCH ($r = .47$) and ABA ($r = .38$). General Efficacy scores correlated positively

only with commitment scores for ABA ($r = .53$). The researchers found no differences in self-efficacy scores based on teachers' self-identified philosophical orientation (TEACCH vs. ABA). The researchers also investigated associations between commitment to a teaching philosophy, age, undergraduate major, and teaching orientation and found that commitment to a teaching philosophy significantly contributed to the explained variability in personal efficacy scores and general efficacy scores, However the choice between ABA or TEACCH had no relation to efficacy scores.

A follow up to this study was carried out by Siu and Ho (2011). They examined the correlation between commitment to specific treatment orientations and teacher self-efficacy. The participants included 115 teachers working with children with autism in Hong Kong. Teachers using one of the two different treatment orientations participated in the study; those oriented towards Applied Behaviour Analysis (ABA), and those committed to the Treatment and Education of Autistic and Communication-related Handicapped Children (TEACCH) orientation. Siu and Ho acknowledged that there were limitations in their study such as the small sample and the instruments they used. Their results were in partial agreement with the study by Jenett *et al.*'s Commitment to a specific orientation revealed a positive impact on personal efficacy, as in the previous study. The results suggested that teachers who identified themselves with the ABA orientation had a significantly higher personal teaching self-efficacy compared to the TEACCH group, as well as the comparison group. No significant difference was found among the three groups in terms of general teaching efficacy. It should be noted that there were twice as many participants in the Siu and Ho study compared to that of Jenett *et al.* and that it was conducted eight years later. During that time ABA became much more prevalent in the educational world. The two studies took place in a different context; hence comparisons should be made with caution. Hoy (2007) expressed scepticism over the adoption of a teaching orientation. She asserted that it can be seen to fall on a continuum between custodial, where there is a high reliance on authoritarian,

extrinsic inducements, and negative sanctions, to humanist, where there is a focus on the individual student and willingness to meet varying individual needs.

Ruble *et al.* (2011) examined the associations between Teacher Interpersonal Self-Efficacy Scale (TISES) scores and scores on variables related to three of the four sources of self-efficacy hypothesised by Bandura (1997a): mastery experience, represented by the number of years teaching students with autism; social persuasions, represented by administrator support; and physiological and affective states, represented by teacher burnout. The authors found a negative association between scores of teacher self-efficacy (for classroom management) and burnout scores, but no linear associations were observed between self-efficacy and years of teaching or administrator support. The lack of between-group differences in reports of self-efficacy measured with the Teacher Efficacy Scale (TES) and the failure to find expected linear associations in studies of self-efficacy using the TISES may partially be explained by measurement issues.

In 2013, Ruble *et al.* carried out a study to evaluate a new measure, the Autism Self-Efficacy Scale for Teachers (ASSET) for its dimensionality, internal consistency, and construct validity derived from a sample of 44 special education teachers of students with autism. Results indicated that all items reflected one dominant factor, teachers' responses to items were internally consistent within the sample, and compared to a 100-point scale, a 6-point response scale is adequate. ASSET scores were found to be negatively correlated with scores on two subscale measures of teacher stress (i.e., self-doubt/need for support and disruption of the teaching process) but uncorrelated with teacher burnout scores. Previously, Ruble *et al.* (2011) had found a negative association between self-efficacy (for classroom management) and burnout using TISES measurement. They treated their results with some scepticism and caution due to their relatively small sample. It is noteworthy that the instrument for measuring Teachers' Self-Efficacy in this study was decided and disseminated before the ASSET instrument was published.

Around the same time as the above study, Boomgard (2013) examined how special

education and general education teachers' perceived self-efficacy and perceived burnout changed as a result of facilitated discussion and self-reflection assignments embedded in an online course, which provided content on the learning and behavioural characteristics within the context of the social- communication challenges faced by students with autism. This study adds valuable knowledge on the impact of vicarious experiences and social persuasion on self-efficacy of teachers however not all the participants were teachers of pupils with autism. A 16-week online university course was designed to meet required competencies for the California Commission on Teacher Credentialing Added Autism Authorisation. Boomgard followed a mixed methodology; the first time this approach had been used to explore self-efficacy of teachers of pupils with autism. Fifteen participants took part in a survey followed by seven interviews. Her quantitative results revealed statistically significant changes for overall self-efficacy as well as for classroom management, instructional strategies, and student engagement. Her qualitative findings revealed the following: a) social persuasion: Special education teachers and other participants expressed perceived changes as a direct consequence of participation in discussions and self-reflections, reading others' comments, and references made to instructional situations in their current or present classrooms within an interactive, online setting. Most participants noted that the interactive nature of the facilitated discussion assignments affected their perceived abilities and confidence to work with students with autism, b) vicarious experiences: Reading about others' successes as well as challenges when implementing the interventions and strategies specifically targeted to the unique learning needs of student with autism provided participants with experiences that appeared to enhance their perception of self-efficacy, c) mastery: Special education teachers in her study were shown more often to express self-efficacy for implementation of strategies presented for students with autism. Some teachers articulated growth over time and expressed a desire to continue honing these skills to become 'more effective' with students with autism, d) affective states: Affective states(burnout): indicated no statistically significant difference from pre-test to post-test for any of the subscale or total scores. Survey information did not yield change over time as anticipated. However, during

her interviews, participants shared teachers' expressions of stress and anxiety in anticipation of the implementation of specific instructional strategies in current or future classrooms with students with autism. This study offered an interesting insight from a methodological point of view as it adds to the existing knowledge. It raised issues of support and dialogue, which is very common in schools for children with autism. There were, however, limitations related to the small sample size and to the fact that the discussions took place online and not in real school environments and that only some of the participants who agreed to take part in the study were in fact teachers of pupils with autism at the time.

Strong (2014) in her doctoral research investigated teachers' perceptions of the professional training about teaching students with autism and the relationships between teachers' knowledge and skill acquisition of evidence-based practice and self-efficacy. The study participants were thirteen professionals who completed a post graduate certificate in autism. The participants rated their opinions about teacher self-efficacy and instructional practices during an online survey regarding their perceptions of the issues that create difficulties for them during teaching. The respondents were consistent in rating themselves, on average, as 'Quite a Bit' using the numeral 7 (with maximum 9) on the scale across all questions. From these results, Strong assumed that the teachers and professionals completing the Post-Baccalaureate Certificate for autism have high self-efficacy regarding instructional strategies. Challenging student behaviour emerged as a theme of concern for these participants in their teaching assignments. Her survey results indicated that the participants had strong beliefs in their abilities to effectively teach their students with autism. Findings also revealed that increased emphasis on skilled use of evidence-based practices positively impacts teacher self-efficacy. Teachers need to witness evidence-based practice actually implemented, and then have opportunities for hands on practice, in order for learning to occur. The participants also expressed the need for additional guided practice to help them gain confidence in their implementation of specific behaviour strategies. According to all participants, the use of evidence-based practices with their students takes some trial and error and overall time to

develop implementation skills. These results are in line with the impact of vicarious experiences on self-efficacy, as shown in Boomgard's (2013) study, as well as with the positive impact of appropriate role models.

In Dimopoulou (2014) I explored self-efficacy and collective efficacy of teachers of pupils with autism. It was the first time the latter was explored for teachers of pupils with autism. The study looked into self-efficacy and collective efficacy beliefs of teachers in requiring improvements and outstanding schools (as graded by Ofsted) for children with autism and also in relation to position and years of experience. The results showed that self-efficacy in outstanding schools was higher than in requiring improvements schools. There was also a difference in self-efficacy amongst staff with different years of teaching experience; more experienced staff showed higher levels of self-efficacy. The mean scores of collective efficacy of members of leadership teams were collectively higher compared to non-leadership team members. It must be noted that there were limitations to this study. The sample was relatively small (39 participants) and also included a disproportionate number of outstanding schools (19) compared to requiring improvements schools (9). Self-efficacy has been associated in the literature with achievement. In outstanding schools, pupils achieve better compared to requiring improvements schools; this may explain the difference in self-efficacy scores.

Dinecola and Lemieux (2015) carried out the first known study to examine interrelationships among graduate social work students' knowledge, self-efficacy, attitudes, interest, formal training, and contact regarding practice with persons with autism. Participants in this study, overall, reported low levels of self-efficacy. Their results indicated that participants' self-efficacy in working with individuals with autism was positively associated with higher levels of knowledge, classroom teaching, and personal and professional contact. In addition, participants' previous contact and knowledge explained a significant proportion of the variance in student self-efficacy in working with individuals with autism. Although this study did not include teachers, it is interesting to see what influences the efficacy of professionals

exerted in the lives and education of individuals with autism. Their results add to the literature weak and highlight the significance of training, mastery and experience in developing self-efficacy.

The studies on the efficacy of teachers of pupils with autism concentrated on different areas and used different instruments to measure teachers' self-efficacy, with perhaps the exception of Jennett *et al.* (2003) and Siu and Ho (2011) that both looked into interventions in relation to efficacy and Strong (2014) and Boomgard (2013) linked self-efficacy and vicarious learning. Collective efficacy for special educators has received even less research interest than self-efficacy.

2.10 Collective efficacy of teachers of pupils with autism

Few studies have examined the impact of collective efficacy on student achievement (Viel-Ruma *et al.*, 2010). Viel-Ruma *et al.* (2010) found a significant relationship between teacher self-efficacy and collective efficacy. However, a significant relationship between collective efficacy and job satisfaction was not detected. Dimopoulou (2014) looked into the self-efficacy and collective efficacy of 39 teachers of pupils with autism in schools rated outstanding and requiring improvements. The results showed an overall positive correlation between self-efficacy and collective efficacy. It was also demonstrated that the collective efficacy of members of the senior leadership teams was higher compared to non-senior teachers. Self-efficacy and collective were both lower for deputy heads compared to heads and assistant heads. The difference in self-efficacy between senior leadership and non-senior members were less compared to collective efficacy.

Summary

This chapter presented the literature on teachers' self and collective efficacy. It started with Bandura's social cognitive theory from which the concept of efficacy grew. Bandura's theory of efficacy received some criticism for being too general and not having predictive powers. However, research on teachers' efficacy has

provided evidence that efficacy does affect teaching. Efficacy is linked to achievement but in the case of children with autism the concept is more complex as is their progress. This chapter looked at sources of efficacy and how the environment, professional role models and teachers' own emotional states can affect their efficacy. Highly efficacious teachers persevere more, set more challenging goals and are more creative in their classrooms whereas low efficacy is not conducive to high expectations and may also lead to burnout. Experience and training play a positive role on teachers' self-efficacy too.

In summary, teachers' efficacy is a concept closely related to teaching which has been significantly under-researched in special education. The available literature revealed associations between vicarious learning, mastery and years of experiences, training as well as stress and teachers' efficacy. However, the research on the self-efficacy of teachers of pupils with autism is extremely limited, especially in the UK. Limited research also means that there is little comparative data to challenge the results of existing research, to look at different settings in order to be able to make wider comparisons as it is the case with mainstream teachers' efficacy research, where there is plethora of studies. The research on collective efficacy of teachers of pupils with autism is even more scarce. This study will add to the limited literature on this field and also seek teachers' views in depth through a mainly qualitative approach which has not been used in current relevant research.

The following chapters outline and discuss the methodology followed to further explore issues stemming from the literature as well as from my professional experience and interests. Below are the issues I will explore in relation to teachers' efficacy:

- Verbal persuasion including feedback and supervision
- Emotional states
- Student achievement
- Children's with autism impairments and special educational needs
- Impact of colleagues' efficacy on teacher's own efficacy
- Collaboration
- Experience

Chapter 3 - Overview of the Methodology and Research Design

Introduction

The goal of this study is to explore teachers' self-efficacy and collective efficacy beliefs in their capabilities in teaching children with autism in schools in the UK. The preceding chapters presented the literature and highlighted important research gaps. The aim of this chapter is to provide an overview of the methodology and the research design employed in this study. Demographic and biographical information acquired were used to explore relationships between the two constructs and teacher/school information with regards to their teaching experience, training, teaching methods and students' attainment. The sections in this chapter present the research questions, research paradigms, detail the explanatory sequential design of this mixed method study discuss methods, participants and address ethical considerations.

3.1 Philosophical background

The philosophical underpinnings of educational research have been a matter of debate and discourse amongst scholars for several decades. There are different schools of thought supporting a number of paradigms. There is the notion that it is essential to adopt a choice of a paradigm at the beginning of a research, which may also be influenced by more than one paradigm. Other scholars are less rigid about research design within a certain philosophical framework, and suggest that a distinct paradigm may not be essential

Researchers largely tend to adopt one of three research paradigms (a) a positivist or post-positivist paradigm (quantitative researchers), (b) a constructivist paradigm (qualitative researchers), or (c) a pragmatist paradigm (mixed-methods researchers) (Klingner and Boardnnan, 2011). Creswell and Plano-Clark (2011) state that there are four worldviews: a) post-positivism is normally associated with a quantitative approach; b) constructivism is typically associated with qualitative approaches, where the investigator works 'from the bottom up' using the participants' views to

build broader themes and generate a theory interconnecting the themes; c) participatory is influenced by political concerns; and d) pragmatism typically focuses on the research problem and the researcher uses all approaches available to understand the problem.

There is a paradigm ‘problem’ with mixed methods deriving from the conflict or ‘paradigm wars’ around the 1970s where social scientists supporting qualitative research came into conflict with positivists who were in favour of quantitative research. This led to a shift in paradigm with the increased popularity and acceptance of qualitative research in the late 1970s (Morgan, 2007). The ‘problem’ is that in mixed methods, researchers employ both qualitative and quantitative methods that may also make it difficult to choose between what may seem to be conflicting paradigms. My dilemma was between the pragmatist and the interpretive view.

Pragmatism suggests that ‘what works’ to answer the research questions is the most useful approach to the investigation. It does not dictate a particular method to be used in order to create new knowledge. The researcher may use a combination of experiments, case studies, surveys or other such combinations enhance the quality of the research (Cohen *et al.*, 2011). Pragmatism is the approach most commonly associated with mixed methods research (Teddlie & Tashakkori, 2009:7). Creswell (2011) identified a number of distinctive features for pragmatism. He suggested that pragmatism applies to multi-methodological research in that researchers draw liberally from both quantitative and qualitative theories employed in their research and are free to decide on the methods, techniques, and procedures of research that best meet their needs. Pragmatism suits this study in relation to the methodological freedom it affords to focus on and answer the research questions.

The ontological assumptions of interpretivism are that social reality is seen by multiple people and these multiple people interpret events differently, leaving multiple perspectives of an incident. Mertens (1998:11) emphasises the importance of researchers understanding participants from their points of view: ‘the researcher should attempt to understand the complex world of lived experience from the point

of view of those who live it'. The role of the researcher in the interpretivist paradigm is to 'understand, explain, and demystify social reality through the eyes of different participants' (Cohen *et al.*, 2007:19). Researchers in this paradigm seek to understand more rather than explain. Creswell *et.al* (2003) assert that the interpretivist researcher tends to rely upon the participants' views of the situation they study and recognises the impact of their own background and experiences on the research. This is what I intended to do and acknowledging my own background was important to me throughout the research, from formulating the questions, through to interviewing and interpreting the participants' views, exercising great caution to avoid bias and my personal subjectivities.

It is not uncommon for the researcher to adopt more than one paradigm. From a pragmatic point of view, I was focused on choosing the methods that best suited my inquiry and at the same time the interpretivist point of view enabled me to better understand the participants' multiple realities. I am aware that I can never fully understand the meanings that other people give to their reality. As a researcher I can only give my own interpretations of those meanings and as such these may be viewed as subjective or biased. Qualitative researchers, and interpretivists in particular, are more subjective in the sense that they are not using a hypothesis but are deeply involving themselves in the research. However, interpretivists can adopt an objective stance when analysing the data collected.

This research did indeed seek to explore the views of participants. I tried to avoid any bias while collecting and analysing data, as I discuss in detail later. I wanted to allow new knowledge and themes to emerge and the results, from the first phase of data collection, provided me with a sharper focus. However, in my view the adoption of mixed methods, incorporating a quantitative first stage and qualitative second phase, is more suited to a pragmatist philosophy in terms of freedom to choose methods that suit the needs of the study. More importantly, I wanted to gauge and explore how the participants' views might be related to their actions. By exploring the phenomena of self-efficacy and collective efficacy while studying the

relevant theory, I wanted to allow for comparisons and a degree of generalisation to inform teaching practices. I sought to explore and provide further knowledge on the suggestions related to teaching children with autism as well as some insight to inform practice in terms of developing self and collective efficacy; which also includes my own practice as a teacher and senior leader.

3.2 Research questions

This study employed a mixed methodology which I explore in detail in the following sections. This study began with a number of research questions which were addressed at the quantitative phase (Phase 1). This phase provided scope and the research questions were further formulated and took shape after the analysis of the first phase. In the first phase (quantitative) I sought to explore the levels of self and collective efficacy of teachers as well as look for relationships between these and a number of demographic factors such as age, position at school (leadership or non-leadership), years of experience, training and the school's Ofsted grading. The outcomes of the first phase combined with my own professional interests as well as the literature guided my thinking and enabled me to make decisions on the issues to explore in the second phase. These were not taken lightly. The time I had available to conduct the interviews would not allow for an in depth exploration of the all the issues which emerged during the first phase. I elaborate on my 'thinking' regarding the transition from one phase to the other in Chapter 5.

Research questions Phase 1:

Question 1: What are the self-efficacy beliefs of teachers of pupils with autism?

Question 2: Do self-efficacy beliefs correlate with demographic factors and pupil achievement?

Question 3: What are the collective efficacy beliefs of teachers of pupils with autism?

Question 4: Do collective efficacy beliefs correlate with demographic factors and pupil achievement?

Question 5: Is there a correlation between self-efficacy and collective efficacy of teachers of pupils with autism?

Later on, the research questions took more shape and became more specific in Phase 2:

1. Do teachers think that self-efficacy impacts on their teaching and pupil achievement?
2. Do leaders impact on teachers' self-efficacy?
3. Do colleagues impact on teachers' self-efficacy?
4. Does experience impact on teachers' self-efficacy?
5. Does pupils' behaviour impact on teachers' self-efficacy?
6. Does managing staff affect teachers' self-efficacy?
7. Does teachers' self-efficacy vary?
8. Do perceptions of stress impact on self-efficacy?
9. What do teachers think about collective efficacy in their school?
10. How do schools graded outstanding by Ofsted influence teachers' self-efficacy?

3.3 Methodology

According to Opie (2004:16) methodology is the 'theory of getting knowledge, to the consideration of the best ways, methods or procedures, by which data will provide the evidence basis for the construction of knowledge about whatever it is that is being researched, is obtained'. It is the 'strategy, plan of action, process or design behind the choice and use of particular research methods' (Crotty 1998:3). I chose to use mixed methods for this study and the rationale is provided below.

The term 'method' derives from the Greek word 'methodos' (meta+odos) (after+way) and refers to the way of searching and acquiring knowledge. Johnson *et al.* (2007) report that a broad interpretation and use of the word methods (in mixed methods) allows the inclusion of issues and strategies surrounding methods of data collection (e.g., questionnaires, interviews, observations), methods of research (e.g., experiments, ethnography) and related philosophical issues (e.g., ontology,

epistemology, axiology). In their view, each of the three major approaches to research include assumptions, principles, and values about these kinds of methodology and practice-related issues as parts of the research paradigm.

The argument though and polarisation between quantitative and qualitative research and the movement away from the strictly positivist approach led to the development, possible acceptance, or increased adoption of a methodology including/mixing both paradigms and types of methodology. The mixed methods approach has been viewed either as a new methodological approach or by others as the ‘third’ paradigm (Cohen *et al.* 2011). Johnson *et al.*, (2007) suggest that they would position mixed research between the extremes Plato (quantitative research) and the Sophists (qualitative research), with mixed research attempting to draw on the wisdom of both of these viewpoints while also seeking a workable intermediate solution for many (research) problems of interest.

Tashakkori and Creswell, (2007:4) define mixed methods as ‘research in which the investigator collects, analyses, mixes, and draws inferences from both quantitative and qualitative data in a single study or a program of inquiry’. A more comprehensive definition was provided by Creswell and Plano Clark (2007:5) who define mixed methods as follows:

‘Mixed methods research is a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis of data and the mixture of qualitative and quantitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems that either approach alone.’

According to Gorard (2004:7) combined or mixed-methods research has been identified as:

‘A key element in the improvement of social science, including education research’ with research strengthened by the use of a variety of methods. It requires a greater level of skill’, can lead to less waste of potentially useful information’, creates researchers with an increased ability to make appropriate criticisms of all types of research and often has greater impact, because figures can be very persuasive to policy-makers whereas stories are more easily remembered and repeated by them for illustrative purposes. ‘

Johnson, Onwuegbuzie and Turner (2007) asked twenty-one researchers for a definition of mixed methods and received nineteen responses. Based on their analysis of the definitions they offer the general definition. ‘Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration (Johnson et al., 2007:123). Bryman (2014) while conducting an overview on Brennan’s work in mixed methods research from 1992 until 2013, summarised the literature by saying that any of the definitions included one or more purpose(s) for conducting mixed methods research. He noted that many mixed methods studies cite multiple reasons for mixing methods and that new reasons for mixing may emerge as the study is underway. He later (2014) pointed out that there is always the possibility of an element of surprise in mixed methods research because of the inclusion of a qualitative research component, as the findings deriving from it can often be unanticipated and even surprising.

Though multiple stages and methods of data collection and/or analysis are involved in mixed methods research, researchers can get a better understanding of a phenomenon by combining the reliability of empirical counts with the validity of lived experience (Wheeldon & Ahlberg, 2011). Creswell and Plano Clark (2011) support the view that integrating methodological approaches strengthens the overall research design, as the strengths of one approach offset the weaknesses of the other,

and can provide more comprehensive and convincing evidence than mono-method studies. In this research the quantitative phase provided data for deeper exploration during the qualitative phase. Creswell and Plano-Clark (2007) see a problem with quantitative results in that they do not provide adequate explanations of outcomes, and the problem can best be understood by using qualitative data to enrich and explain the quantitative results in the words of the participants. Situations in which this problem may occur are those in which the quantitative results need further interpretation as to what they mean or when more detailed views of select participants can help to explain the quantitative results. It also depends on the focus of the study whether the quantitative results can sufficiently answer the research questions. Denscombe (2008:208) summarises the reasons why researchers choose to adopt the mixed methods approach and synthesises the various typologies that arise from reviews of existing mixed methods research, i) some researchers use mixed methods to improve the accuracy of their data, while ii) others use mixed methods to produce a more complete picture by combining information from complementary kinds of data or sources Sometimes iii) mixed methods are used as a means of avoiding biases intrinsic to single-method approaches - as a way of compensating specific strengths and weaknesses associated with particular methods. Mixed methods have been iv) used as a way of developing the analysis and building upon initial findings using contrasting kinds of data or methods. Finally, mixed methods approaches have often been v) used as an aid to sampling with, for example, questionnaires being used to screen potential participants for inclusion in an interview programme.

Mixed-methods designs are better suited to unravelling educational phenomena ‘of enormous complexity’ (Berliner, 2002:20 in Klingner & Boardman, 2011). Greene (2007:20) called mixed methods the ‘multiple ways of seeing and hearing’. This largely describes what I sought to do; to look at the evidence, at the bigger picture and to hear the attitudes, opinions and views of the participants. Greene *et al.* (1989) identified five purposes for mixed-method evaluations, grounded both in the theoretical literature and in evaluation of practice as represented by the 57 empirical

studies reviewed: triangulation, complementarity, development, initiation, and expansion. Greene *et al.* (1989:260) define complementarity as a ‘purpose for mixed methods research which ‘seeks elaboration, enhancement, illustration, clarification of the results from one method with the results from the other method’. By combining both inductive and deductive thinking the researcher tends to base knowledge claims on pragmatic grounds (Creswell & Plano-Clark, 2011). This supports why I related methodologically to pragmatism.

The mixed methods approach, while allowing phenomena to be examined in a more holistic way, is characterised by complexity and requires meticulous handling of the data. A summary of the strength and weaknesses it is listed below (Table 3):

Strengths	Weaknesses
<ul style="list-style-type: none"> • numeracy and text can be combined to create more detailed picture of phenomena • numbers can support narratives and narratives can clarify statistics • broader range of research questions • triangulation supports corroboration and convergence of data • prevents exclusion of data through oversight with one method; • more complete knowledge can be generalisable 	<ul style="list-style-type: none"> • challenging strategy for a single researcher • requires high degree of knowledge and experience with qualitative/quantitative research • not wholly accepted within the research field as credible • expensive and time consuming • incomplete strategies for addressing philosophical, strategic, methodological and interpretive conflicts

Table 3 - Strengths and Weaknesses of Mixed methods (Neuman, 2006; Johnson & Christensen, 2007)

There does not seem to be a unified and unequivocal answer as to what is the most appropriate way qualitative, quantitative and mixed method to employ while doing a research project. The presence of a clear rationale is often proposed as a quality consideration because it gives a sense of what the researcher was trying to glean from the use of the two types of methods within a single project. It gives a sense of how the researcher envisaged the likely relationship between the two components (Bryman, 2014). It is down to the researcher to study closely the potential of each approach and carefully decide which best suits the nature of the inquiry and which methods could be used to answer the research question.

The methodology for this research was identified during the initial stages of the project. Even though a qualitative approach was initially considered, the richness of the quantitative data, the value of the information as well as the way those shaped up the second phase led to the decision that an approach which incorporated the strengths and the contribution of each of the two methodological approaches was more suited to the nature of the research, also in line with the pragmatists stance of ‘what works’. Without the quantitative phase, I would have not been able to measure the levels of self and collective efficacy of the participants that was thought to be an important element of this study. Also, without the correlations that were revealed during the quantitative stage I would have not been able to identify an informed focus for the qualitative exploration. In addition, in the literature about self-efficacy and collective efficacy there is very little evidence of the measurement of teachers of pupils with autism and less so in relation to demographic independent variables. Hence, it was thought that the analysis of those data would form an important contribution to the literature.

Mixed methods present a number of challenges for researchers. As seen in Table 3 earlier, they can be time consuming and require a strategic and methodical approach. It took almost three years to collect and analyse the results of each phase. The challenges regarding the methods are described in detail later in this chapter where I also elaborate on the ways I attempted to mitigate against those. I had completed a master’s degree following a qualitative approach and since then two academic papers following a quantitative approach. I felt more confident in my knowledge of qualitative research, which is one of the reasons I chose it for the main phase of the study. To compensate for my relative weakness in quantitative methods I read widely within the literature on quantitative research and I attended seminars and sought advice from academics with experience in this area.

3.3.1 Research design

Increasingly there is an expectation that researchers specify the format of their research (Bryman, 2014). Creswell *et al.* (2003) suggest that there are four key

decisions involved in choosing an appropriate mixed methods design to use in a study. These decisions address the different ways that the quantitative and qualitative strands of the study relate to each other (Teddlie & Tashakkori, 2009). They also use the term ‘strand’ which refers to a component of a study that encompasses the basic process of conducting quantitative or qualitative research: posing a question, collecting data, analysing data, and interpreting results based on that data (Teddlie & Tashakkori, 2009). The decisions are (1) the level of interaction between the strands, (2) the relative priority of the strands, (3) the timing of the strands, and (4) the procedures for mixing the strands (Creswell *et al.*, 2003). These decisions should be examined along with the available options. They also support the use of qualitative and quantitative analyses in chronological order, or sequentially (i.e., sequential mixed analysis) or concurrently (i.e., concurrent mixed analysis).

Creswell and Plano Clark (2011) described six possible designs: convergent, explanatory, exploratory, embedded, transformative and multiphase design. There is also the case of emergent mixed methods designs generally which occur when a second approach (quantitative or qualitative) is added after the study is underway because one method is found to be inadequate (Morse & Niehaus, 2009). The designs differ according to the level of prioritisation of one form of data over the other, to the combination of data forms in the research process (such as during the collection or analysis phases), and to the timing of data collection, such as whether the quantitative and qualitative phases take place concurrently or sequentially, and if so, in what order (Creswell, Fetters & Ivankova 2004). Bryman (2014) notes that the research designs outlined by Creswell *et al.* (2011) are meant to be prototypes and as such serve mainly as guides to the articulation of the different forms that mixed methods research can assume.

The quantitative and qualitative phases can occur in different orders, precede or follow one another as well as take place simultaneously. Sequential timing occurs when the researcher implements the strands in two distinct phases, with the collection and analysis of one type of data occurring after the collection and analysis

of the other type (Creswell & Plano-Clark, 2011). A researcher using sequential timing may choose to start by either, collecting and analysing quantitative data first or collecting and analysing qualitative data first (Creswell & Plano-Clark, 2011). Data collected in these designs help select participants who can best provide data for the second stage, or to generalise findings by verifying and augmenting study results from members of a defined population (Creswell & Plano-Clark 2007). This research also followed a sequential timing with the quantitative phase (questionnaires) preceding the qualitative phase (interviews). The questionnaires were analysed and the results informed the direction of the qualitative phase.

Coffey and Atkinson (1996) assert that there are no formulae or recipes for the ‘best’ way to analyse the stories we elicit and collect. However, in this research the analysis was based on the model of the sequential explanatory design.

3.3.1.2 The sequential explanatory design

The sequential explanatory mixed-methods design consists of two distinct phases: quantitative followed by qualitative (Creswell *et al.*, 2003). Creswell and Plano-Clark (2001:71) describe the steps as follows: This design starts with the collection and analysis of quantitative data, which has the priority for addressing the study’s questions. This first phase is followed by the subsequent collection and analysis of qualitative data. The second, qualitative phase of the study is designed so that it follows from the results of the first, quantitative phase. The researcher interprets the way that the qualitative results help to explain the initial quantitative results. In this study the purpose of the qualitative phase was to further explore than explain or purely interpret the results of the quantitative phase. From a pragmatic point of view this approach was most suitable in providing a focus and answering the research questions.

There are two variants on the explanatory design: the follow up-explanations model and the participant explanation model (Creswell & Plano-Clark, 2007). Although both models have an initial quantitative phase followed by a qualitative phase, they

differ in the relationship between the two phases, with one focusing on results to be examined in more detail and the other on the appropriate participants to be selected (Creswell & Plano-Clark, 2006:72). They also differ in the relative emphasis often placed on the two phases. There are two ways in which a researcher can prioritise one method over the other (Creswell & Plano-Clark, 2011). The prototypical follow-up explanations variant is the most common approach for using the explanatory design where the researcher prioritises the initial, quantitative phase and uses the subsequent qualitative phase to help explain the quantitative results (Creswell & Plano-Clark, 2011). Although less common, the participant-selection variant arises when the researcher prioritises the second, qualitative phase instead of the initial quantitative phase. This variant has also been called a quantitative preliminary design (Morgan, 1998 in Creswell & Plano-Clark, 2011). It is used when the researcher is focused on qualitatively examining a phenomenon but needs initial quantitative results to identify and purposefully select the best participants. This variant was used in this study.

Creswell and Plano-Clark (2006:75-76) identify the following strengths and challenges of the Explanatory Sequential Design

Strengths

- Its two-phase structure makes it straightforward to implement, because the researcher conducts the two methods in separate phases and collects only one type of data at a time. This means that single researchers can conduct this design; a research team is not required
- The final report can be written in two phases, making it straightforward to write and providing a clear delineation for readers.
- This design lends itself to multiphase investigations, as well as single mixed methods studies.
- This design appeals to quantitative researchers, because it often begins with a strong quantitative orientation

The two distinct phases enabled me to focus on one type of data collection at a time. The choice of the explanatory sequential design also presents challenges. Below I list the challenges and I comment on the actions I took to try and overcome those.

Challenges

- This design requires considerable amount of time for implementing the two phases. Researchers should recognise that the qualitative phase (depending on the emphasis) will take more time than the quantitative phase, but that the qualitative phase can be limited to a few participants. Still, adequate time must be allowed for the qualitative phase.

The quantitative phase in this study lasted much longer than the qualitative phase as it took a long time for the questionnaires to be returned.

- The researcher must decide whether to use the same individuals for both phases, to use individuals from the same sample for both phases, or to draw participants from the same population for the two phases.

Some of the participants from the first phase were approached to participate in the second phase but very few were available. I had to ensure that the participants in the qualitative stage came from a population with similar demographics.

- It can be difficult to secure internal review board approval for this design because the researcher cannot specify how participants will be selected for the second phase until the initial findings are obtained.

The ethics committee provided approval of this study. An initial requested was submitted and after amendments were made a final approval was granted in September 2011.

- The researcher must decide which quantitative results need to be further explained. This was decided after the quantitative phase was complete. Significant results and findings were chosen for further exploration based on my own interested and relevant literature.

- This is an important part and indeed not all the information that came from the survey was explored. I made choices about which data to further explore based on the quantitative results, my interests, current research gaps and the literature. This was a complex process. I had to take into account the limited time available for interviews, which would only allow for a number of issues to be explored in depth.

The research took place over three years. The table below shows the process I followed (Table 4).

Recruiting participants for the quantitative phase lasted over a year. Due to the lengthy nature of the questionnaire, participants were not always willing to dedicate the time required. I ensured that the questionnaires were sent to a large number of schools. Paper copies as well as electronic surveys were sent to increase participation. I also sent a number of reminders.

The data collection period qualitative phase lasted for six months. The reason again was the time teachers had to allow for the interviews which had to take place during their school hours. This was challenging, at times, to organise due to participants' busy schedules. I allowed flexibility for the times and dates of interviews.

I was not able to specify which participants from the first phase would be selected for the second phase. However, I made contact with participants who completed the survey and who had agreed to be interviewed. I also contacted schools with children with autism in the area of Greater London.

I analysed the quantitative data and a number of results were produced which will be examined in the following chapter. In deciding the focus of the qualitative phase, I looked into the more 'striking' results. Those, combined with my particular interests, formulated the focus and subsequent research questions. This process is explained in Chapter 5.

The explanatory sequential design was chosen in order to provide a deeper and more complete understanding of the issues of self and collective efficacy of teachers of pupils with autism. The quantitative data and its subsequent analysis allowed trends to become apparent and provided a general understanding of the research problem (Ivankova, Creswell & Stick, 2006). Also, multiple methods provide a more complete understanding of the research problem (Creswell, 2007). However, the limitations of this design were the length of time required and the availability of resources to collect and analyse both types of data (Ivankova, Creswell & Stick, 2006). I will now discuss the instruments I used in each of the phases of the design.

Sequential explanatory Design

<p>Phase 1: Quantitative</p>	<p>Data Collection n=77 participants</p> <p>Disseminating three questionnaires (online and hard copies)</p> <p>Data Analysis Descriptive Statistics, Inferential statistics investigating correlations between variables</p> <p>Results</p>
<p>Intermediate Phase</p>	<p>Identify results for follow-up</p>
<p>Phase 2: Qualitative</p> <p>Interpretation</p>	<p>Data Collection n=24 participants Semi-structured interviews</p> <p>Data Analysis Thematic analysis</p> <p>Results Analysing and discussing themes</p> <p>Answering research questions, linking themes to the literature, integration of data</p>

Table 4 - This study's sequential explanatory design process

3.3.2 Instruments

This study used questionnaires in Phase 1(Appendix 1).and semi-structured interviews in Phase 2. I distributed three questionnaires during the quantitative

phase. The TSDES (Teaching Students with Disabilities Efficacy Scale Teaching Students with Disabilities Efficacy Scale) (adapted from Dawson, 2010) was used to measure teachers' self-efficacy. An amended version of 'Collective Efficacy Teacher Belief Scale' by Tschannen-Moran and Barr (2004) was used to measure teachers' collective efficacy. A demographic questionnaire was also used to collect information about age, position at school, experience, training and qualifications. I sent out the questionnaires to schools for children with autism, or with autism specific units, across the country. The second phase was the main phase of the study. In order to find the answer to my questions and explore the participants' views through interviews, I chose five schools and undertook a total of twenty-four interviews with teachers and members of senior leadership teams (a breakdown of the participants is provided in later sections). The methods and instruments of each phase are discussed below. Details about the participants and data collection are provided in chapters 4 and 6, where each phase is described and discussed in detail.

3.3.2.1 Survey Instruments

Questionnaires are one of the main data collection tools and one of the most used components in quantitative research but are also a very useful tool in qualitative research. Oppenheim (1992) sees questionnaires neither as an official form nor as a set of questions that have been casually jotted down without much thought, but as an important instrument of research, a tool for data collection. He also sees the questionnaire's function being the measurement, the detailed specification of which aims must be precisely and logically related to the aims of the overall research plan and objectives (Oppenheim, 1992). In this research postal and online questionnaires were used. There are advantages and disadvantages as well as limitations in both.

Postal questionnaires

'The main advantages of postal questionnaires according to Oppenheim (1992:102) are the low cost of data collection and processing, the avoidance of interview bias and the ability to reach respondents at widely dispersed areas'. Cohen and Manion (2007:218) also add that 'postal questionnaires allow respondents to complete them

at their own convenience, and in their preferred surroundings and own time'; this enables them to check information if necessary (e.g. personal documents) and think about the responses.

The disadvantages of the postal questionnaires according to Oppenheim (1992) include generally low response rates and consequent biases, potentially poor accessibility to the questions due to language related difficulties and the lack of opportunity to correct misunderstandings, to probe or offer explanations, lack of control over the order in which questions are answered, inability to check incomplete questionnaires or the passing on of questionnaires to others, lack of opportunity to collect ratings or assessments based on observations. The participants in this study responded better to the postal questionnaires than the online questionnaires. Cohen *et al.* (2007:218) add to the list of challenges that 'respondents may not take the care required to complete the survey carefully and, indeed, may misunderstand the questions'. There was no way of checking this other than at the pilot stage which did not reveal any concerns of this nature. To reduce the possibility of misunderstandings an explanation was included on the front page. I also included my contact details in case more clarification was required but none of the participants sought any. In terms of 'skipping' questions, which is easier to avoid in online questionnaires, there were very few questions that were not answered. Bailey (1994, Cohen *et al.*, 2007) also asserts that some of the elements that may render the postal surveys unappealing include the lack of control over the environment in which the survey questionnaire is completed, the inability to record spontaneous answers. The latter is in fact in conflict with the preceding claim that having time to think and respond to the questions is an advantage to postal questionnaires. During the piloting and dissemination process, teachers mentioned that they preferred to complete the questionnaire in their own time and that having a paper copy made it transportable and logistically easier to complete at different stages when they could spend time thinking about the questions as opposed to completing the online survey which some of them felt was rushed.

Online questionnaires

Internet surveys are becoming commonplace in many branches of social research (Cohen *et al.*, 2007). Online questionnaires nevertheless are similar to postal questionnaires in the sense that respondents have remote access to them. They do however have their own distinct features as well as advantages and disadvantages. Online questionnaires in this research were accessed through a web-based survey. These have the potential to reach greater numbers of participants, so web-based surveys are advisable (Cohen *et al.*, 2007). E-mails were used in addition to contact participants to advise them to go to a particular web site.

An online-questionnaire is a tool that essentially incorporates the elements of a questionnaire, a web-based survey as well as the functions of the internet; its characteristics, advantages and disadvantages thus derive from all three of these. With the expansion of internet usage and technology the use of online-questionnaire and web-surveys has increased in the past decade. Dillman (2000:354) argues that ‘web surveys not only have a more refined appearance to which colour may be added, but also provide survey capabilities far beyond those available for any other type of self-administered questionnaire’. Apart from the common advantages (compared to sending out physical questionnaires) of cost, coverage, anonymity and biases which were discussed earlier, online questionnaires have some further advantages in administration and response. Those can be summarised as follows (Cohen *et al.* 2007:230):

‘The questionnaires can reach the participants fast which can result in covering an even greater population as they can be accessed from any area with internet coverage. Responses in web-based surveys show fewer missing entries than paper-based surveys. Human error is reduced in entering and processing online data. Additional features may make the survey attractive (e.g. graphics, colour, fonts, and so on). Greater generalisability may be obtained as Internet users come from a wide and diverse population’.

Online-questionnaires are often criticised in terms of their vulnerability to the four standard survey error types namely coverage, non-response, sampling, and measurement errors (Lumsden, 2005).

Even though internet use is widespread, not all potential respondents have equal access. There are also accessibility issues related to levels of familiarity and internet literacy as well as technical and connection errors which may arise. Those may lead to participants choosing not to proceed further due to technical errors. On this occasion, the participants did not have the opportunity to save the questionnaire in order to complete it later. Internet based surveys tend to take longer to complete and this is an important issue when completing a lengthy questionnaire. Also, the presentation of the questionnaire may vary according to the size and the quality of the screen used which again may affect accessibility. In addition, respondents are 'forced' to answer every question. That was also the case with the present questionnaire. A decision had to be made on whether or not to enable this function. I decided that if the participants had the choice not to answer a question, this could affect the general response. It is acknowledged also that this element has an impact on the reliability of the questionnaire and the quality of the responses.

Using mixed type surveys

In order to increase the rate of responses I used both paper and online questionnaires in the form of a web-based survey. The participants were given the option of responding via the internet or receiving a hard copy. This option was provided in order to increase participation. Most participants chose to receive the hard copy version. More paper questionnaires were returned compared to those completed online. I then compiled all the responses into one Excel document. It is acknowledged however that the differentiated use of the instrument might have had an impact on the way the participants responded and hence the reliability of the results. Dillman *et al.* (2001) argue whether people who respond in one mode provided the same answers as would have been the case had they responded in another mode. This pitfall would have had no impact on the demographic part of the

questionnaire. However, given the length of the questions as well as the associated issues with an internet based tool, which will be discussed below, it could have an impact on the time participants spent on thinking and answering the questions and hence their subsequent responses.

Survey Instruments -Teachers, Efficacy Scale (TSDES)

Self-Efficacy measurements have raised concerns amongst researchers regarding their conceptual and psychometric problems (Pajares, 1996) and specifically about teachers' self-efficacy measurement (Tschannen-Moran *et al.* 1998). In order to overcome such measurement issues, researchers have been encouraged to phrase self-efficacy or collective efficacy items using wording reflecting forward-looking capability and specifically to word items in terms of 'can', rather than 'will', e.g., 'How confident are you that you can carry out x task?'(Klassen *et al.*, 2011).

The TSDES (Teaching Students with Disabilities Efficacy Scale) (adapted from Dawson, 2010), was originally based on Tschannen-Moran and Woolfolk Hoy's (2001) Teacher Self-Efficacy Scale (TSES). The TSDES was constructed as a Likert-type scale, based on the work of and advocated by Bandura (Tschannen-Moran, Woolfolk Hoy, 2001). The validity and reliability of TSDES was established during the development phase of the tool to measure teacher efficacy for teaching students with disabilities. The TSDES is moderately correlated with the TSES, offering support for the differentiation of the tool with the Teacher Self-Efficacy Scale, which was designed to measure teachers' beliefs in teaching the typically developing population (Dawson, 2010). TSDES was converted to British English and also the term 'disabilities' was replaced by the term 'autism'. These changes are thought not to have affected the validity of the questionnaire for two reasons. The first is that the questionnaire comes from a developed Western country with similar advancements in education and culture. Secondly, the initial term 'disabilities' included children with autism and the questions covered a range of teachers' roles and responsibilities, which were relevant to teachers of pupils with autism. Such amendments concentrated on the vocabulary used without altering the meaning of

the question e.g. ‘I can give consistent praise for students with *Autism* (as opposed to disabilities), regardless of how small or slow the progress is’. The TSDES included 45 items, on a 9 point continuum ranging from 1-‘Nothing at all’, 3- ‘Very little’, 5 – ‘Some degree’, 7-‘Quite a bit’ and 9-‘A great deal’. The in-between numbers had no titles but the graduation was obvious. The reliability of the questionnaire was also established during the pilot stage and via statistics as described below. I calculated the Cronbach’s alpha reliability coefficient for TSDES was excellent ($>.9$) at $a=0.973$ using SPSS which is very close to the reliability result for the original TSDES questionnaire $a=0.971$ (Dawson, 2010).

Survey Instruments – Collective Efficacy Teachers’ Beliefs (CETBS)

Measurement issues and congruence with established theory are a serious problem affecting collective efficacy research (Klassen *et. al.*, 2011). An amended version of ‘‘Collective Efficacy Teacher Belief Scale’ by Tschannen-Moran and Barr’s (2004) was employed for this study. The reason that this tool was chosen was because several studies used collective efficacy scale, a 12-item scale focusing on teachers’ collective capabilities, e.g., ‘How much can teachers in your school do to produce meaningful student learning?’ displaying a closer congruence to collective efficacy theory (Klassen *et. al.*, 2011:196). The questionnaires included 12 items with a 9 point range from ‘Nothing at all’ to ‘A great deal’. Very few amendments were required with regards to the wording of two questions to be relevant to British English as opposed to American English without altering the meaning of the questions. The reliability coefficient for the Collective Efficacy beliefs scale was calculated using SPSS software and was excellent ($>.9$) at $a=0.941$. The a for the original was calculated at $a=0.970$ (Tschannen-Moran & Barr, 2004)

Survey Instruments –Demographic questionnaire

The self-efficacy and collective efficacy questionnaires were coupled with questions to gather demographic and biographic information from the participants. The demographic variables provided information in regards to their teaching experience,

training, teaching methods and students' attainment. These parameters were chosen in order to enable explorations between those self-efficacy and collective efficacy. The choice of these parameters was based on my own interests as well as the literature on self and collective efficacy.

The questionnaire consisted of fourteen items with multiple choice answers in the form of words. The number of choices offered varies based on the nature of the question e.g. for the question, 'Is this your preferred teaching intervention?' two answers were offered whereas for the question 'Indicate the years of teaching experience you have including this year' five answers were offered. The participants were asked to choose from multiple answers for the following items. Position at school, age, years of teaching experience, including this year, years of experience teaching children with autism, years of experience teaching in autism in ASD schools, number of years working in current school, overall attainment of students (in P levels), specific autism intervention training, teaching intervention currently implementing, whether the current intervention is their preferred teaching intervention, type of training participants received for their teaching intervention, whether they have received training on behaviour management, frequency of supervision they were receiving, the level of their teaching qualification and the level of their qualification in autism.

3.3.3 Piloting Questionnaires

'Questionnaires do not emerge fully-fledged: they have to be created or adapted, fashioned and developed to maturity after many abortive test flights' (Oppenheim, 1992:47). It is important as in any research for the instruments to be piloted prior to distribution. Piloting can help us not only with the wording of the questions but also with the procedural matters such as the design of the letter of introduction, the ordering of the questions and the reduction of non-response rates (Oppenheim, 1992). Walliman (2005) suggested performing a pilot study (also known as pilot experiment) in which a questionnaire would be pre-tested on a small number of people of a type similar to that of the intended sample.

Online and paper questionnaires were circulated to colleagues from the Education departments as well as teachers of pupils with autism in relevant schools in London. Ten teachers in total who took part at the pilot stage stated that the questions were generally clear. The teachers who took part in piloting the questionnaires were also asked to provide information regarding the length, the layout and the general usability of the instrument. Bourque and Fielder (2003) recommend that whenever possible questionnaires should be either adapted or adopted from other studies. A few recommendations were provided regarding the order of some questions as well as the wording, mainly with regards to US English as it was mentioned earlier. The questionnaires used were taken from the American educational context and certain terminology had to be changed to fit the British context in order to be relevant and understood by the participants of this study. Caution though was taken not to alter the nature of the questions as this could affect the validity of the instrument. The participants commented on the time it took them to complete the survey, which ranged from twenty to thirty minutes and advised that at least a week's time should be given to the teachers to complete the study. They also noted that I should be mindful not to ask the teachers to complete the survey around the end of term times as this is traditionally a busy period for teachers.

3.3.4 Survey sampling

The sample in research refers to 'any group from which information is obtained' (Fraenkel & Wallen, 1996:91). The sample is the main source of data collection and therefore the process of selecting the sample requires careful consideration. It is 'a smaller (but hopefully representative) collection of units from a population used to determine truths about that population' (Field, 2005:120). The purpose of sampling is to obtain a group of subjects who will be representative of the larger population or will provide specific information needed. The degree of representativeness is based on the sampling technique employed (McMillan, 1996). 'The quality of a piece of research not only stands or falls by the appropriateness of methodology and instrumentation but also by the suitability of the sampling strategy that has been adapted' (Cohen *et al.*, 2000:92).

Cohen *et al.* (2011) identified five key factors that determine the sampling strategy to be used: the sample size, the representativeness and parameters of the sample, the sampling strategy used, the kind of research that is being undertaken. In this research I adopted a non-probability sampling strategy. I used purposive and to a lesser extent snowballing techniques to identify participants best suited for the purposes of this study. The study was based in UK schools for children with autism. The list of participants was drawn from the National Autistic Society (NAS) school database and from data from the Department for Education, which produced 166 results (schools). The participants chosen to complete the questionnaires were teachers in senior or non-senior positions employed by maintained or non-maintained school educating children with autism. Details of the survey participants are provided in Chapter 4.

Teachers of children with autism were selected as participants for this study. The main reason is that I was interested in exploring the efficacy of this particular group of teachers, as I have been a teacher of pupils with autism myself. I was interested in exploring the efficacy of teachers in relation to pupils with autism. Teachers who teach pupils with autism are exposed to the same spectrum of educational challenges deriving from the children's particular educational needs. Teachers who teach children with other SEN or mainstream pupils would not be necessarily facing the same challenges. The participants were included if they were currently teaching children with autism either exclusively or inclusively, or other special educational needs as well as mainstream children. I first chose the types of schools I wanted to take part in the study (schools for ASD children and schools with ASD units). I compiled a list of suitable schools across the country. I chose the schools first, as I was interested in exploring the efficacy of teachers who work predominantly or specifically with children with autism, as opposed to teachers in special schools who may have some children with autism in their class or school. I approached those schools requesting senior leaders and the teachers who were teaching children with autism to participate in the quantitative stage. After the results were analysed, as

described in Chapter 5, I approached outstanding schools and requested to interview teachers of children with autism and senior leaders.

3.3.5 Interviews

Qualitative interviews are effective research instruments for getting deep insights about how people experience, feel and interpret the social world (Mack *et al.*, 2005). Kvale (1996:1) defines qualitative research interviews as "attempts to understand the world from the subjects' point of view, to unfold the meaning of peoples' experiences, to uncover their lived world prior to scientific explanations." He sees the qualitative research interview as a construction site for knowledge. An 'interview is literally an *inter- view*, an inter-change of views between two people conversing about a theme of mutual interest' (Kvale, 1996:14). 'Interviews enable participants to discuss their interpretations of the world in which they live and to express how they regard situations from their own point of view' (Cohen, *et al.* 2011:409). 'Interviewing provides access to the context of people's behaviour and thereby provides a way for researchers to understand the meaning of the behaviour' (Seidman, 2006:10). Kok (2008) sees the interview as a two-way dialogue or a conversation where the participants give the researcher a greater chance of getting in touch with the participants 'inner world of experience.

In the teaching profession, when you want to get information, canvass opinions, or exchange ideas, the natural thing to do is to talk to people (Drever, 2003). Talking is a very powerful tool. It encompasses all those aspects that written speech cannot convey and there is so much more meaning one can elicit from the norms and characteristics of verbal communication. Robson (2002) also suggests that the use of interviews is the most appropriate method of data collection when an investigation is concerned with establishing what individuals may actually think, a particular context, and revealing their thoughts and feelings in relation to a particular issue. Interviews were chosen to enable the use of open type questions and explore the researched issue in depth and generate a 'rich' set of materials (Richardson, 2000). I

therefore wanted to interview teachers in order to get a sense of their views, feelings and attitudes in relation to self-efficacy and collective efficacy.

Denzin and Lincoln (2008) describe the steps of the 'how to' approach in relation to interviewing in its more traditional form. They also assert that the illusion still exists that the better the researcher executes the various steps, the better they will apprehend the reality that they assume is out there, ready to be plucked: a) Accessing the setting, b) Understanding the Language and Culture of the respondents: This includes not only language barriers but refers also to the intricacies within common language and the understanding of meaning, c) Deciding how to present oneself: the impression of the researcher, both in appearance, personality and stance may have great influence on the way the participants respond and hence on the success of the study d) Locating the informant: this refers to finding an insider, a member of the group who can provide insights into the characteristics of the group, e) Getting the trust: Gaining trust is essential to the success of the interviews, and once gained, trust can be very fragile, f) Establishing rapport: for the purposes of understanding, it is paramount to establish rapport with respondents; that is the researcher must be able to take the role of the respondents and attempt to see the situation from their viewpoint rather than superimpose his or her world of academia and preconceptions on them g) Collecting empirical material: refers to the method of collecting data such as recording as well as the use of field notes. Regardless of the circumstances the researchers ought to take notes regularly and promptly, write down everything no matter how unimportant it seems at the time, try to be as inconspicuous as possible in note taking, and analyse notes frequently.

Interviewees are enormously valuable and it is imperative that consideration is given to assure quality indicators. Kvale (1996:145) lists a number of quality criteria for an Interview: a) The extent of spontaneous, rich, specific, and relevant answers from the interviewee. b) The shorter the interviewer's questions and the longer the interviewer's answers, the better. c) The degree to which the interviewer follows up and clarifies the meanings of the relevant aspects of the answers. d) The ideal

interview is to a large extent interpreted throughout the interview. e) The interviewer attempts to verify his or her interpretations of the subject's answers in the course of the interview. f) The interview is 'self-communicating' – it is a story contained in itself that hardly requires much extra descriptions and explanations.

Interviews are an invaluable source of information. However, they have some disadvantages. Cicourel (1964 in Cohen *et al.*, 2011) list five of the unavoidable features of the interview situation that would normally be regarded as problematic:

1. There are many factors that inevitably differ from one interview to another, such as mutual trust, social distance and the interviewer's control.
2. The respondent may well feel uneasy and adopt avoidance tactics if the questioning is too deep.
3. Both interviewer and respondent are bound to hold back part of what it is in their power to state.
4. Many of the meanings that are clear to one will be relatively opaque to the other, even when the intention is genuine communication.
5. It is impossible, just as in everyday life, to bring every aspect of the encounter within rational control.

All the above criteria were taken into major consideration while planning and conducting the interviews. I ensured that the interviewees were clear about the purpose of the interview and that the questions were understood. I also encouraged the interviewees to ask me to repeat or clarify any questions they thought not to be clear. Probes were also used to encourage participants to elaborate. In cases where verification was required, I was careful to avoid leading or influencing the interviewees' responses and I also allowed the participants to expand and elaborate.

3.3.5.1 Semi-structured interviews

The types of interviews vary. The selection of the type of the interview should be made in line with the 'fitness of the purpose' of the research Cohen *et al.* (2001). Interviews vary in pre-determined structure depending upon the research question

and purpose, but generally fall within three types: structured, semi-structured and unstructured (Robson, 2002). The type of interview chosen for this research was semi-structured. Semi-structured interviews fall somewhere between the structured and the unstructured. This type of interview refers to ‘predetermined questions, but the order can be modified based upon the interviewer’s perception of what seems most appropriate’ (Robson, 2002:270). The interviewer, however, needs to have a clear list of issues to be addressed and questions to be answered but this there is still emphasis on the interviewee expanding and elaborating points of interest (Denscombe, 2008). An in-depth approach to semi-structured interviewing encourages flexibility as it covers a sequence of themes but is accommodating in design and the process is responsive to participants’ personal accounts (Kvale, 1996). Flexibility within the design of the interview allows a greater focus on the contributions of participants in their particular areas of expertise (Miles & Huberman, 1994).

The interviewers seek to generate rich insights into narratives, experiences, attitudes, feelings and perspectives (May, 2001; Bryman, 2014) by allowing the person interviewed to answer at some length in his or her own words, and the interviewer to respond using prompts and follow-up questions in order to get the interviewee to clarify or expand on the answers. Carspeken (1996:159-60 in Cohen *et al.*, 2011:236) describes how semi-structured interviews can range from the interrogator giving bland encouragements, ‘non leading’ leads, active listening and low – inference paraphrasing to medium- and high-inference paraphrasing. To avoid having biased data, the researcher should maintain his own knowledge and let the interviewee ‘flow’ (May, 1997). Perceived interviewer bias may well lead to interviewee or response bias. Long questions or those that are really made up of two or more questions should also be avoided if you are to obtain a response to each aspect that you are interested to explore (Robson 2002). As in any interview process there is a possibility that certain questions are or may be perceived as sensitive. Healey and Rawlinson (1994:138) suggest that ‘it is usually best to leave sensitive questions until near the end of an interview because this allows a greater time for the

participant to build up trust and confidence in the researchers'. I was very mindful and conscious of the need to establish a positive rapport with the participants. This was also to encourage the possibility that interviewees may discuss or add valuable and interesting information during the final stages of an interview (Robson, 2002).

My intention was indeed to create the circumstances that would allow the participants to feel free to elaborate on the issues and at the same time give me the flexibility to explore the responses further.

A total of twenty-four participants from five outstanding schools agreed to be interviewed. There was only one participant who felt uncomfortable about the interview being recorded and decided to withdraw. The participants were generally very willing to be interviewed and elaborate on their experiences regarding self and collective efficacy. The interviewees were asked to complete the survey questionnaires prior to the interview. This also familiarised them with the topics of self and collective efficacy. The interviews began with an explanation of the purpose of the research. I gave a definition of self and collective efficacy as suggested by Bandura (1997a) to ensure that the participants were familiar with the constructs. I also wanted to eliminate the chance that participants who were not familiar with the concepts of self and collective efficacy may have been hesitant to ask for clarification. There were, however, cases where the definition had not been fully understood. I was very careful to provide further explanation in such a way as not to influence the answers and not to make the participants feel uncomfortable in any way. I chose not to ask the interviewees demographic questions related to their years of experience or training at the beginning of the interview in order to avoid any possible biases or preconceptions. However, I was aware of whether a participant was a member of the senior leadership team. The latter was important so that more relevant questions would be asked. In most cases the person who was responsible for organising the interviews in each school provided me with a list of names and roles of the participants.

While talking to the participants, as mentioned in the bias section, I was aware that my background may have an effect on the participants' responses. I am an active member of the educational community, I have been a teacher of children with autism and a member of senior leadership teams for a number of years. I had also known a few of the participants professionally from previous employment. I chose not to discuss my full background with the participants prior to the interviews to avoid any biases or to influence their answers in any way. I am aware that there is a possibility that non-senior members of staff may feel less comfortable while discussing their practice with adults who hold more senior positions.

A list of interview questions was put together for the semi-structured interviews to address the research questions (Appendix 4). Those were piloted as described below.

3.3.6 Piloting Interviews

The pilot test assists the researcher in determining whether there are flaws, limitations, or other weaknesses within the interview design and will allow him or her to make necessary revisions prior to the implementation of the study (Kvale, 2007). Seidman (2013) summarises the benefits of pilot phases by suggesting that researchers gain knowledge and insight in terms of the appropriateness of their research structure for the study they envision, they come to grips with practical aspects of accessibility, they can be alerted to elements of their own interview techniques that support the objectives of their research and those that detract from those objectives. Three teachers and two senior leaders took part in the pilot stage. The participants selected for this stage had similar professional characteristics to those who participated in the study. The participants made comments on the clarity and length of the questions as well as on the duration of the interview. As a result, some of the questions were rephrased or broken down into smaller elements. Participants also stated that they felt relaxed during the interview and that I adopted an attitude which made them feel at ease. The participants found the questions interesting and insightful. An important aspect of the pilot was to enable me to reflect on whether the questions used could in fact provide knowledge, insight and

indeed answer the main research questions. I shared those concerns with the participants after their interviews. They found that the questions indeed made them reflect on their practice and think about ‘how’, ‘why’ and ‘what’ shapes their own self and collective efficacy.

3.3.7 Interview Sampling

The use of purposive sampling technique involves the selection of participants based on the typicality or characteristic being sought by the researcher. It is a purposely and intentionally selected section of a wider population that could be included or excluded from the study (Cohen *et al.*, 2011). In purposive sampling the researcher selects particularly informative or useful subjects that will be representative or informative about the topic. Based on the researcher’s knowledge of the population, a judgment is made about which cases should be selected to provide the best information to address the purpose of the research (McMillan, 1996). Purposive sampling operates on the principal that the researcher can get the best information through focusing on the relatively small number of instances selected, based on their attributes, their relevance to the issue being investigated as well as the knowledge and expertise about the topic (Denscombe, 2014). I identified outstanding schools in the area of Greater London which educated children with autism and made contact with those through e-mail explaining the purpose of my research and asking to interview teachers and members of the leadership team. I also approached schools I had previously worked in. Details about the roles of the participants and the types of schools are discussed in chapter 6.

3.4 Ethical issues

Due consideration was paid to establish reliability and validity of the instruments and the study as well as to conform to ethical guidelines throughout. Those issues are detailed below.

Anonymity and confidentiality

Participants' right to privacy has two basic principles: anonymity and confidentiality. The essence of anonymity is that information provided by participants should in no way reveal their identity (Cohen *et al.*, 2011:91). The principal means of ensuring anonymity is not using names of the participants or any other personal means of identification (Cohen *et al.*, 2011:91). Assurance and information about confidentiality was provided to all participants in relation to all information they shared with me. The participants were not asked to provide their names or other identifiable details while completing the questionnaires. On occasions where the participants could be identified by their unique post they held in their school e.g. headteachers, I ensured that their identity would not be identified in the published study and that I was the only person who would have access to the raw data. The only characteristic identifiable by me was the postcode of the school on the questionnaire for data analysis purposes so that the type as well as the Ofsted rating of the school could then be identified. During the interviews, neither the names of the participants nor the schools were not mentioned. The participants were coded with a mix of letters and numbers only identified by me e.g. 'P-TWELVE'. All but one participant agreed to proceed.

The second way of protecting a participant's right to privacy is through the promise of confidentiality: 'not disclosing information from a participant in any way that might identify that individual or that might enable the individual to be traced' (Cohen *et al.*, 2011:92).

The interviews took place in a private room. The participants were informed that the interviews were going to be recorded and then transcribed. The participants were informed of their right to withdraw from the research at any point during the interview or the research.

The data that has been obtained from the research is kept in a safe place, where confidentiality of information can be maintained. The data could possibly be utilised for future follow-up studies (Cohen *et al.*, 2011).

Informed Consent

Prior to data collection ethical approval was sought and gained from the academic institution. Seeking approval and informing the participants involved was taken very seriously during this research. Cohen *et al.* (2007:52) pointed out the need to protect and respect the right of the respondent to self-determination to participate or withdraw from the research process, thus placing ‘some of the responsibility on the respondents should anything go wrong in the research’. They also asserted that research participants should be fully aware and understand research nature, procedures and risks involved.

During the quantitative phase I made contact by e-mail with the headteachers of all the schools that had been identified as relevant for the study requesting their participation (Appendix 2). This included schools exclusively for children with autism or schools, either mainstream or special, with autism provision. In the email I clearly explained the nature of the research. I asked headteachers, if they gave consent to proceed with the study, to distribute the questionnaires to the teachers in their schools. The questionnaires, both hard copies and online, contained an introductory page with information about the study as well as reassurances about the anonymity and confidentiality of the participants and the data as well as their right to withdraw at any time. Before the questions section, the participants were asked to tick a ‘yes’ box stating their consent.

At the beginning of the qualitative phase, similarly, I contacted by e-mail headteachers of outstanding schools (it is explained later why outstanding schools were specifically chosen) educating pupils with autism informing them of the nature of the research and requesting permission to interview staff in their schools; both teachers and members of the senior leadership team (Appendix 3). The headteachers stated their consent by responding to the email. Members of staff were then asked to agree to participate. A senior person from each of the schools contacted me by e-mail informing me of the number of staff who had agreed to take part in the research. At the beginning of the interviews I asked the participants in person to confirm their

willingness to take part in the research also informing them about the anonymity, confidentiality as well as of their right to withdraw at any point of the research. The interviewees' verbal consent was recorded on the recording device at the start of each interview session.

3.5 Reliability and Validity

Definitions of reliability and validity in quantitative research reveal two strands: Firstly, with regards to reliability, whether the result is replicable. Secondly, with regards to validity, whether the means of measurement are accurate and whether they are actually measuring what they are intended to measure. However, the concepts of reliability and validity are viewed differently by qualitative researchers who strongly consider these concepts defined in quantitative terms as inadequate. In other words, these terms as defined in quantitative terms may not apply to the qualitative research paradigm (Golafshani, 2003).

Reliability

In a research context, reliability can be defined as the extent to which a research project, if replicated using the same procedures and methods, would produce the same or similar results to the original research (Robson, 2002). It is a measure of consistency over time and over similar samples (Cohen *et al.*, 2011). Lincoln and Guba (1985:288) point out that 'instead of obtaining the same results, it is better to think about the dependability and consistency of the data'.

Marshall and Rossman (1999) and Seale (1999) argued that the absolute replication of qualitative studies is very difficult to achieve since they reflect realities at the time they were collected and in situations that are likely to change. Reliability can be enhanced through an aspect of reflexivity, which is 'showing the audience of research studies as much as possible of the procedures that have led to a particular set of conclusions' (Seale, 1999:158). Gray (2004:345) asserted that 'in terms of reliability, it is fairly obvious that taped conversations will tend to present more reliable evidence than hastily written field notes'.

Henson *et al.* (2001) stated that it is insufficient to assume that a test will yield reliable scores solely because reliable scores have been obtained in the past; although what is acceptable is a somewhat arbitrary decision and ultimately determined by the context of a study. It is important to remember that a test is not reliable or unreliable. Reliability is a property of the scores on a test for a particular population of examinees. Thus, authors should provide reliability coefficients of the scores for the data being analysed even when the focus of their research is not psychometric (Wilkinson & APA Task Force on Statistical Inference, 1999:596 in Henson *et al.*, 2001).

Gronlund and Linn (1990:78 in Henson *et al.*, 2001) note that ‘reliability refers to the results obtained with an evaluation instrument and not to the instrument itself. Thus it is more appropriate to speak of the reliability of ‘test scores’ or the ‘measurement’ than of the ‘test’ or the ‘instrument’. Henson *et al.* (2001) also recommend that ‘self-efficacy researchers should be certain to examine score reliability for data in hand, even in substantive studies. After developing their tests, researchers would also do well not to then erroneously claim that their ‘test is reliable’.

As this study used mixed methods, reliability was ensured for both the quantitative and qualitative stages. For the former, quantitative part, reliability of the instruments was established by reliability coefficient test. The reliability of the results was secured by selecting a sample relevant to constructs in question. Reliability of the qualitative stage was not as straightforward to establish. However, every effort was made throughout the phase to ensure that both measures and responses were reliable. Hitchcock and Hughes (1989, in Cohen *et al.*, 2011) argue that because interviews are interpersonal, humans interacting with humans, it is inevitable that the researcher will have some influence on the interviewee and, thereby, on the data. Silverman (1993, in Cohen *et al.*, 2011) suggest that one way of controlling reliability is to have highly structured interviews. Even though the interviews in this study were semi-structured, consideration was given to planning the interviews so that probing and

questioning had less impact on reliability. This was also tested during the pilot stage. The questions were tested and also careful consideration was given during prompting so as not to mislead answers.

Validity

Validity is concerned with whether a piece of research is believable and true and whether it is evaluating what it claims to evaluate. Onwuegbuzie and Johnson (2006) used the term 'legitimation' to refer to validity in mixed methods research. They defined the problem of legitimation as 'the difficulty in obtaining findings and/or making inferences that are credible, trustworthy, dependable, transferable, and/or confirmable' and as 'making inferences that are credible, trustworthy, dependable, transferable, and/or confirmable' (2006:52 in Leech *et al.*, 2009).

Qualitative research can be validated through the use of carefully structured and transparent research methodology and design, analysis and interpretation (Robson, 2002). According to Hammersley (1987:69) 'an account is valid or true if it represents accurately those features of the phenomena, that it is intended to describe, explain or theorise'. Denscombe (1998) added that the use of multi-methods for examining one issue corroborates the findings of the research and increases the validity of the data. Winter (2000) notes that validity is concerned with two main issues: whether the instruments used for measurement are accurate and whether they are actually measuring what they want to measure. He also argues that external validity is an irrelevance for qualitative research as it does not seek to generalise but to represent the phenomenon being investigated. Qualitative validity, and how terms such as trustworthiness and authenticity created a 'new', distinct language to discuss validity (Lincoln & Guba, 1985). According to Kvale (1989) three approaches to validity in qualitative research are validation as investigation, as communication, and as action. Leech, Dellinger, Brannagan, and Tanaka (2009) used the term 'construct validity' as an overarching validity concept for mixed methods research.

Zohrabi (2013) states that on the whole, the following miscellaneous procedures can be used to validate the instruments and the data: a) content validity, b) internal validity, c) utility criterion, and d) external validity. Validity can be viewed in different ways in qualitative and quantitative approaches as argued above. However, in both cases issues of sampling, elimination of bias, credibility and trustworthiness are common ground. During the course of this research efforts were made to minimise bias, ensure accuracy of the instruments used, selecting a sample suitable to the purposes of the research and employing accurate tools and techniques to analyse and present the results.

Validity of questionnaires can be seen from two points (Beston, 1986 in Cohen *et al.*, 2011). First, whether the respondents who completed the questionnaires have done so accurately and second, whether those who fail to return their questionnaires would have given the same distribution of answers as the returnees. The participants received guidance and support in completing the questionnaires. The pilot process suggested that the questions were clear and straightforward. To address the issue of the non-respondents, efforts were made first to secure maximum return by sending reminders to encourage participation. The results can only be based on the eventual sample. Efforts were made to collect a representative sample. The current research seeks to describe the phenomenon observed and any generalisations will be made with caution and taking into account the limitations involved. For qualitative researchers, generalisability can be perceived as the 'fit' between the cases studied and the other situations to the extent that make it possible to generalise the findings of the research (Schofield, 1993). Lincoln and Guba (1985) argue that it is not possible for any real world research to reveal a pattern of data that is wholly and uniformly consistent and has no examples that do not conform to the trends which are apparent in the majority of the data.

Cohen *et al.* (2011) supports the view that one way of achieving greater validity in interview is minimizing bias. The issue of bias is seen as one of the threats of validity in qualitative methods. As discussed above, during the interview process the

questions and probes were used with caution and also in order to eliminate misunderstandings so that the participants would provide responses relevant to the questions. In analysing the responses, cultural and other contextual information of such nature was not taken into account.

Cohen *et al.* (2011) support the view that one way of achieving greater validity in interview is to minimise bias. The issue of bias is seen as one of the threats of validity in qualitative methods. During the interview process the questions and probes were used with caution and also in order to eliminate misunderstandings so that the participants would provide responses relevant to the questions. In analysing the responses, cultural and other contextual information of such nature was not taken into account. I used respondent validation by checking back with the participants during the interview, to established clarity of meaning by using phrases such as ‘Are you saying that....?’ Respondent validation was used in the piloting, when the transcriptions where shared with the interviewees.

Zohrabi (2013) summarises that on the whole, the following miscellaneous procedures can be used to validate the instruments and the data: a) content validity, b) internal validity, c) utility criterion, and d) external validity.

a) Content validity. Content validity is s related to a type of validity in which different elements, skills and behaviours are adequately and effectively measured. Instruments and the data might be reviewed by the experts in the field of research (Zohrabi, 2013).

Content validity of the interviews was established through the piloting stage and with discussions with my supervisors.

b) Internal validity was established by means of triangulation, minimising bias, peer examinations and members checks (Zohrabi, 2013). In terms of triangulations data was collected through several sources. Semi-structured interviews, three questionnaires as well as Ofsted reports. With regards to bias, as discussed earlier,

even though I had my own views I made every effort to analyse and interpret data as impartially as possible. Using careful prompts during interviews and following a systematic approach in thematic analysis, helped in eliminating biases. Another way to maximise validity was to share to discuss the instruments with colleagues during the pilot stage and also discuss the findings from the quantitative and qualitative study. Those were discussed with colleagues and my supervisors. Member checks, as in checking the accuracy of the responses with the participants was established during interviews by asking questions such as ‘do you mean...?’, ‘are you trying to say that...?’ etc.

- c) Utility criterion. This criterion intends to inquire whether or not the research works and asks whether the evaluation endeavour generates enough information for the decision-makers with regard to the effectiveness and appropriateness of the study (Zohrabi, 2013:259). This is an exploration of the efficacy of a representative sample of teachers of children with autism. This is an area that has been insufficiently explored so far and the findings add value to the theory and practice of teachers of children with autism in terms of exploring and enhancing efficacy and contributing to pupil progress.
- d) External Validity. Bryman (2004:285 in Zohrabi, 2013: 259) argues, ‘the findings of qualitative research are to generalise to theory rather than to population’. The external validity of this research was enhanced by using purposive sampling. A number of teachers of children with autism chosen from a variety of schools ensure a representative sample.

Validity of the instruments used for this study was also established. TSESD was established through its correlations to Tschannen-Moran and Woolfolk Hoy’s already-established scale. The scales found to be moderately correlated. This is reasonable as TSESD is capturing slightly different aspects of teacher efficacy than the TSES given the nature of the items, ‘I can do...with students with disabilities’

(Dawson, 2011). Dawson also carried out three consecutive studies to further strengthen the reliability and validity of her instrument.

Validity of CTES was based on the popularity of this instrument. It has been widely used to measure teachers' collective efficacy. The study of Klassen (2010) indicated that the CTES, is valid and reliable to measure collective teacher efficacy beliefs.

3.6 Reflexivity

Reflexivity means the researcher being aware of the effects of their 'methods, values, biases, decisions, and mere presence in the very situation they investigate' (Bryman, 2004:543). Holloway (1997) and Charmaz (2006) report that interpretive research needs to be reflexive. The background of the researcher plays an important role in maintaining reflexivity. Malterud *et al.* (2001) stated how the researcher's background and position affect all aspects of the research. In particular they noted that it will affect what they choose to investigate, the angle of investigation, the methods judged most adequate for this purpose, the findings considered most appropriate, and the framing and communication of conclusions. They also clarified the distinction between preconceptions and bias, unless the researcher fails to mention. 'In the social sciences, there is only interpretation. Nothing speaks for itself' (Denzin and Lincoln, 2005:500). Sandelowski and Barroso (2002:222) elaborated on the meaning of reflexivity in qualitative research:

'Reflexivity is a hallmark of excellent qualitative research and it entails the ability and willingness of researchers to acknowledge and take account of the many ways they themselves influence research findings and thus what comes to be accepted as knowledge. Reflexivity implies the ability to reflect inward toward oneself as an inquirer; outward to the cultural, historical, linguistic, political, and other forces that shape everything about inquiry; and, in between researcher and participant to the social interaction they share'.

I adopted a reflexive attitude throughout the study. Having been an active professional in the field of special education, I had inevitably formed ideas and opinions about the teaching profession. From the earlier stages of the research careful consideration and thought was given while selecting participants, disseminating the questionnaires, interviewing, analysing and discussing the results. Due consideration was given to ensuring that the analysis, presentation and discussion of the findings reflected the views and opinions of the participants and not mine. The quantitative part of the research was felt to be less threatened by bias due to the nature of the analysis. The interviews however, due to the complex nature of human communication were felt to be more susceptible to bias and open to interpretation. Prompt questions were asked to establish clarification. Notes were also kept regarding contextual information of the participants which were used during the analysis. Appendix 5 included notes I used during the interviews for each participant which I further enriched after the transcription of each interview.

3.7 Triangulation

Denzin (1978:14) recommended the use of between-method triangulation, contending that by utilising mixed methods, ‘the bias inherent in any particular data source, investigators, and particularly method will be cancelled out when used in conjunction with other data sources, investigators, and methods and (b) ‘the result will be a convergence upon the truth about some social phenomenon’. According to Denzin, three outcomes arise from triangulation: convergence, inconsistency, and contradiction. Whichever of these outcomes prevail, the researcher can construct superior explanations of the observed social phenomena.

Denzin (1970) identified multiple triangulations that can be used in the same investigation, these include: (1) Methodological triangulation – the use of multiple methods to collect data. This study used both quantitative (questionnaires) and qualitative (interviews) methods to collect data. (2) Data triangulation – the use of a variety of data sources in a study in terms of person, time and space. There were 77 participants in the quantitative study who worked in either special or mainstream

schools. The participants came either from Greater London (n=40) or the rest of the country (n=37). Participants held a variety of positions in their schools. The participants who were interviewed came from five different schools. Overall the participants varied in their years of experience in the field, age, training and qualifications. (3) Investigator triangulation – whereby multiple researchers are employed to investigate the problem. I am the sole researcher in this study, however the instruments were piloted and the study has been scrutinised by my two supervisors (4) Theoretical triangulation – the approaching of the research with varied perspectives and hypothesis. Although this is an exploratory research and there was no hypothesis, the literature was thoroughly explored. Research on efficacy was explored in terms of mainstream, special and teachers of pupils with autism. The findings of this study were discussed in relation to the literature.

Summary

The literature on research methodology is an evolving field. It is becoming more acceptable and perhaps common for researchers to use a combination of elements of both qualitative and quantitative methods without the need for a rigid distinction. Lodico *et al.* (2010) acknowledge that many researchers combine both approaches in order to gather a breadth of data to validate their results. Based on the nature of the inquiry, I decided that mixed methods was the most suited approach. Pragmatism and interpretivism guided my inquiry I followed a sequential explanatory design. Quantitative data was gathered via surveys and was further explored through participant interviews. The reason for opting for a mixed method approach was to provide focus and allow a deeper understanding of the teachers' views. The qualitative approach through interviews allowed an in depth probing of phenomena; in this study the teachers' beliefs, understandings, opinions (Wilson, 2009). The following chapter details the quantitative phase which is followed by an intermediate, integration data stage before continuing to the qualitative phase.

Chapter 4 - Quantitative Phase

Introduction

The previous chapter outlined the methodology. This chapter provides a detailed overview of the quantitative stage of the study. The chapter begins with the aims and objectives of this phase of the mixed methods. It then describes the instruments used, the participants and the data collection process. Following that, analysis and the findings of this phase are detailed.

4.1 Aims and Objectives of Phase 1

The quantitative phase aimed to answer the following questions:

Question 1: What are the self-efficacy beliefs of teachers of pupils with autism?

Question 2: Do self-efficacy beliefs correlate with demographic factors and pupil achievement?

Question 3: What are the collective efficacy beliefs of teachers of pupils with autism?

Question 4: Do collective efficacy beliefs correlate with demographic factors and pupil achievement?

Question 5: Is there a correlation between self-efficacy and collective efficacy of teachers of pupils with autism?

The dissemination of three questionnaires, as detailed below, aimed to capture the levels of self-efficacy and collective efficacy not just as a whole but also in different areas within those two constructs. I wanted to see which areas teachers feel the most efficacious. Another important reason for carrying out the survey was to find out whether and how different demographic factors (independent variables) correlate with self-efficacy and collective efficacy (dependent variables).

4.2 Quantitative Design

A notable gap in the literature has been identified with regards to the study of self-efficacy and collective efficacy of teachers of pupils with autism in the UK.

Questionnaires for both constructs were disseminated including also a demographic questionnaire. The quantitative phase lasted approximately one year. This included the time to identify instruments, participants, disseminate questionnaires, collect responses and analyse data.

Three questionnaires were used during the quantitative phase as was described in Chapter 3. The TSDES (Teaching Students with Disabilities Efficacy Scale Teaching Students with Disabilities Efficacy Scale) (adapted from Dawson, 2010) was used to measure teachers' self-efficacy. An amended version of 'Collective Efficacy Teacher Belief Scale' CETBS by Tschannen-Moran and Barr (2004) was used to measure teachers' collective efficacy. A demographic questionnaire was also used to collect information about age, position at school, experience, training and qualifications. I sent out the questionnaires to schools for children with autism, or with autism specific units, across the country.

Information about the quality of provision in each school as graded by Ofsted was found on the website of each school, as Ofsted reports are public documents. Indicators of the quality of the provision were used as variables during the analysis.

4.3 Participants

Seventy-seven (n=77) teachers in total agreed to complete the questionnaires. The participants came from autism specific schools (n=34), special schools with a specific autism provision in the form of a unit or resource (n=24) base and mainstream schools with autism provision in the same form as before (n=19). The schools were primary (n= 28), secondary (n=26) or all age (n=23). The schools were based in the Greater London area (n=37) and the rest of Britain (n=40) (Table 5).

Type of school	Participants	Stage of education		
		Primary	Secondary	Pri & Sec
ASD	34	14	10	10
SEN -ASD unit	24	3	9	12
Mainstream - ASD unit	19	11	7	1
Total	77	28	26	23

Table 5 - Survey schools and participants

It is not possible to calculate an accurate percentage of the total number of the teachers of the schools that were initially contacted since the exact number of teachers in each school could not be identified. Of the 77 teachers who agreed to participate in the study twenty-five were teachers, twenty-three were lead teachers and twenty-nine were members of senior management teams of whom fourteen were Headteachers, eight were Deputy Heads and seven were Assistant Heads (Table 5).

Role at school	Participants	ASD	SEN with ASD units	Mainstream with ASD units
Head	14	10	2	2
Deputy head	8	7	1	0
Assistant head	7	2	4	1
Total Senior	29	19	7	3
Lead teacher	23	4	10	9
Teacher	25	13	7	5
Total	77	36	24	17

Table 6 - Survey participants by role

4.4 Data Collection

The schools were initially contacted via e-mail and were asked to complete the online survey between the period of February and March 2012. Most of the e-mail addresses of the schools were provided and the rest were acquired from an internet search as well as the National Autistic Society (NAS) database. The total time taken to complete the surveys ranged from 20 to 25 minutes. Follow up reminders were sent after ten days. A small number of schools replied stating that they did not wish to participate in the study as they found the survey time consuming. A few schools asked to receive paper copies of the survey. Paper copies of the questionnaires were sent to 160 schools between April 2012 and June 2012, including those that had been contacted via email. The envelopes were addressed to the Headteachers. Each envelope contained five paper copies of each questionnaire, a note requesting participation and explaining the study and a stamped, self-addressed envelope to be

returned to the researcher. Schools were allowed to make more copies of the questionnaires.

In order to maximise the exposure and of the study with the view to reach more schools and attract more participants I contacted the National Autistic Society (NAS) requesting support. The study was advertised via the NAS website and information emails were sent by the NAS to their subscribed schools. The study, including the online survey link, was also advertised on social media. The researcher also attended a number of autism related events and approached teachers and school leaders in order to promote the study.

Of the total number of schools contacted (n=166), 62 (45.2%) schools responded and a total of 77 teachers. From those, 30 participants (39%) completed the survey online and 47 (61%) returned the paper questionnaires.

Participation in the survey was voluntary. The participants were asked to indicate 'Yes' or 'No' by ticking or marking the respective box to state whether they agreed to complete the survey. A description of the study was available at the beginning of the survey. My contact details were also available to all participants in case they wished to receive more information about the study. The participants were also asked to indicate whether they would agree to be interviewed by the researcher at a later stage by providing their email address. Some of them did.

4.5 Data Analysis

The sequential explanatory design, as described previously, involves two discreet phases; the quantitative and the qualitative. The quantitative phase was deemed appropriate in order to investigate relationships between the variables and provide a tighter focus for the qualitative phase.

The online questionnaires were completed using the Bristol Online Survey System. Data for the online survey were exported onto an Excel spreadsheet. The data from

the hard copy questionnaires were also added to the Excel spreadsheet. The complete data set was analysed using ‘Statistical Product and Service Solutions’ (SPSS). In line with the sequential explanatory design (Figure 3) statistics were performed, as described below, to identify relationships between the dependent variables (self-efficacy and collective efficacy) and independent variables (demographic information).

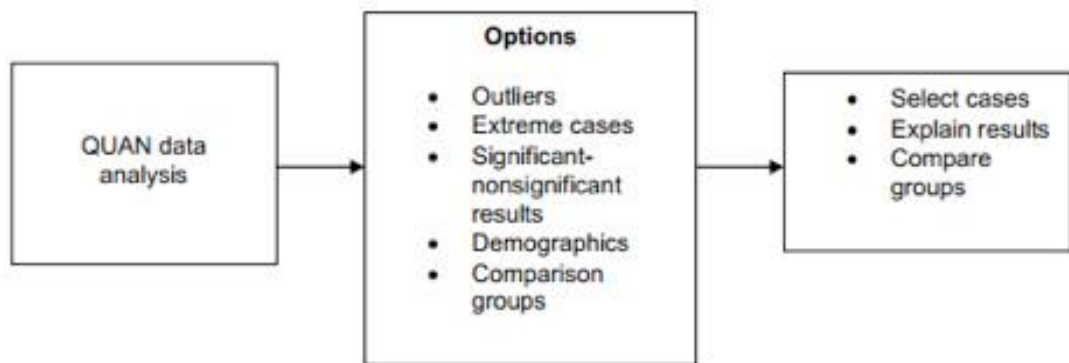


Figure 3 - Sequential Data Analysis Procedures

A total of 77 participants completed the questionnaire. Most of the participants were either teachers or lead teachers. Nearly half of the participants worked in schools for children with autism. Almost a third (31.2%) of them worked in mainstream schools with an autism unit and 23.4% worked in special schools with an autism unit. Most of the participants worked in primary schools however there was little difference in populations based on the level of education of the school. More than half of the participants worked in schools rated as ‘Good’ by Ofsted. I found the schools’ Ofsted reports by identifying each school using the postcode the participants had provided in their questionnaires and then looking at the schools’ websites. Nearly a third worked in Outstanding rated schools and only 10% worked in schools rated by Ofsted as Requiring Improvements (RI). The term ‘Satisfactory’ has been used in the past by Ofsted to describe RI schools.

4.5.1 Internal consistency of the examined instruments

Cronbach’s alpha was used to examine the internal consistency of the two instruments, namely CETBS and TSDES. Cronbach’s α for TSDES showed a strong

alpha value ($\alpha=0.973$) and hence strong reliability. Cronbach's α for CETBS also showed an excellent alpha value ($\alpha=0.941$). Items designed to measure collective efficacy beliefs about teaching strategies showed a very satisfactory alpha value ($\alpha = .907$). Similar results were obtained for items developed to assess CE about students' discipline ($\alpha = .891$). With regards to the TSDES instrument Cronbach's alpha values ranged from adequate (Related Duties) to very satisfactory (Classroom Management) (Table 7). Based on the above findings, seven new variables were created representing the average scores of items designed to measure their corresponding subscales. The table below shows median, minimum and maximum values for the subscales. It also shows the percentage of responses for each subscale based on the 9 scale continuum provided for each question.

	Me dia n	Mi n	Ma x	No t at all		Very little		Som e Degr ee		Qui te a bit		A grea t deal	A
<i>Collective Efficacy</i>													
Teaching Strategies	8	3	9	0	0	1	2	4	6	23	20	44	.907
Students' Discipline	8	3	9	0	0	0	1	7	6	31	17	37	.891
<i>Self-Efficacy</i>													
Professionalism	9	3	9	0	0	1	1	3	2	16	16	62	.852
Teaching Practices	9	4	9	0	0	0	2	2	4	19	23	50	.911
Classroom Management	8	2	9	0	1	0	0	2	4	29	24	39	.941
Teacher Support	8	1	9	1	1	1	1	2	3	15	26	51	.915
Related Duties	9	1	9	13	2	2	0	4	1	12	16	50	.747

Table 7 - Descriptive statistics of the Collective Efficacy and Teachers' Self-Efficacy subscales/factors

4.5.2 Descriptive statistics of the examined instruments

Descriptive as well as inferential statistics were used to analyse the present data. In particular, means and standard deviations were employed to describe continuous variables, and counts and frequencies for categorical variables. Pearson's correlation coefficient r was used to examine the association between two continuous variables

whereas Spearman's *rho* was used for the association between a continuous and an ordinal variable.

Analysis of variance (ANOVA) was implemented to examine possible differences between means. This type of analysis seemed to be appropriate because I was interested in locating differences in the means scores (e.g. self-efficacy) of more than two groups (e.g., Quality of schools, three levels, Outstanding, Good, Satisfactory). In the light of an overall significant effect the analysis was continued with post-hoc test. Among the various existing criterion for post-hoc comparisons the Bonferroni was selected. Bonferroni controls type I error very well and has adequate power when the number of comparisons is small, as is the case in this study (Field, 2005: 340).

Likert scales are commonly used to measure attitude, providing a range of responses to a given question or statement (Cohen et al. 2000). Likert scales fall within the ordinal level of measurement; the response categories have a rank order, but the intervals between values cannot be presumed equal (Jamieson, 2004). A researcher, therefore, might know how much stronger or how many more units 'agree' is than 'somewhat agree' (Carifio and Perla, 2007:111). There has been a long-standing controversy regarding whether ordinal data, converted to numbers, can be analysed using parametric tests Carifio and Perla(2007), for example, believe that the lack of understanding of the difference between Likert scales and Likert response formats is the root of the confusion. Norman (2010) using real scale data found that parametric tests such as Pearson correlation and regression analysis can be used with Likert data without fear of 'coming to the wrong conclusion'. Glass et al. (1972) found that F tests in ANOVA could return accurate p-values on Likert items under certain conditions.

Jamieson (2004) supports the view that if there is adequate sample size (at least 5–10) and if the data are (nearly) normally distributed (or nearly normal), parametric tests can be used with Likert scale data. Norman (2010) suggest that for the standard t tests ANOVAs, is the assumption of normality of the distribution of means, not of

the data and for sample sizes greater than 5 or 10 per group, the means are approximately normally distributed regardless of the original distribution. The sample size of each group in the present study was >5 and can be reasonably assumed that the sampling distribution of the mean follows the normal distribution. Moreover, in the present study the ordinal scale had more than five levels. Thus, for the above reasons and in order to be consistent with prior findings it was decided to apply parametric tests and, in particular, t-test and ANOVA, under Norman's (2010) reassurance that there was little fear of coming to the wrong conclusions.

The descriptive statistics were based on the factors derived from the original questionnaires' factor analysis. In order to determine whether the data were suitable for factor analysis Tabanich and Fidell, (2007) suggested that a sample of between fifty and one hundred is poor (for this study $n=77$) and in such cases the factor loadings should be high. They also suggest that the number of variables should not be too high or too low (in this study there were 45 variables in the TSDES questionnaire and 12 variables in the CETBS questionnaire). In order to test the suitability of the data for factorisation the Barlett test of sphericity and the Kaiser-Mayer-Olkin (KMO) measure of sampling adequacy here calculated. A .000 for the Barlett test was not an acceptable score; being lower than 0.005 and showing that there is no statistically significant difference between the variables. The KMO for this study was .824 being within the acceptable levels between 0.6 and 1.

On the basis of the literature, a decision was made to accept the factors for the original questionnaires. A further reason for this decision was that the questionnaires were both in English and came from a western developed culture which is similar to the British culture. Nineteen out of the forty-five questions of the TSDES questionnaire were associated with the factors as seen in Appendix 9.

Mean values and standard deviations of the Collective Efficacy Teacher Beliefs Scales CETBS and TSDES subscales are presented in Table 7. Visual examination of table 7 clearly shows increased self-reported values for all subscales. The highest

mean score was observed for the ‘Professionalism’ and the lowest for the ‘Related Duties’.

4.5.3 Associations among instruments’ subscales

Pearson’s correlation coefficient was employed to study the strength of the associations amongst CETBS and TSDES subscales (Table 7). Overall associations were significant and positive, ranging from moderate to strong. In particular, the two subscales of the CETBS instrument were strongly and positively correlated. Among the TSDES subscales the strongest correlation was observed between ‘Professionalism’ and ‘Teaching Practices’ ($r = .725$) and the weakest between ‘Classroom Management’ and ‘Teacher Support’ ($r = .375$).

With regards to the association among subscales of the two instruments lower Pearson’s r coefficients were noticed. As it was anticipated the higher values were observed between ‘Teaching Strategies’ and ‘Teaching Practices’ ($r = .551$), whereas the lowest between ‘Students’ Discipline’ and ‘Teaching Support’ ($r = .296$) (Table 8).

	1	2	3	4	5	6
<i>Collective Efficacy</i>						
1. Teaching Strategies	1.00					
2. Students’ Discipline	.827*	1.00				
<i>Self-Efficacy</i>						
3. Professionalism	.519*	.530*	1.00			
4. Teaching Practices	.551*	.440*	.725*	1.00		
5. Classroom Management	.375*	.330*	.579*	.677*	1.00	
6. Teacher Support	.474*	.296*	.519*	.551*	.375*	1.00
7. Related Duties	.418*	.498*	.477*	.477*	.381*	.418*

Table 8 - Pearson’s correlation coefficients among Collective Efficacy and Teachers’ Self-Efficacy subscales

4.5.4 Influence of background characteristics on Collective Efficacy and Teachers’ Self-Efficacy

Two types of analyses were implemented to examine the influence of participants’ background characteristics on Collective Efficacy and Teachers’ Self-Efficacy. First, Analysis of Variance (ANOVA) was used to study the effect of a categorical variable on self-efficacy measures. In light of significant differences post hoc

analysis was employed using Bonferroni criterion. Second, Spearman's rho coefficient was used to examine the association between an ordinal and a continuous variable. The alpha level was set to .05.

Type of provision. One-way ANOVA using type of school as independent variable with three levels (ASD, MAIN/UNIT, SEN/UNIT) showed no significant differences on Collective Efficacy and Teachers' Self-Efficacy ($p > .10$).

Level of education. One-way ANOVA using level of education as independent variable with three levels (Primary, Secondary, Primary/Secondary) showed no significant differences on Collective Efficacy and Teachers' Self-Efficacy ($p > .10$).

Quality of school provision. One-way ANOVA using assessment of school evaluation as independent variable with ratings levels (outstanding, good, satisfactory/requires improvement) showed significant differences on Teacher Practices, $F(2, 74) = 5.76, p = .005$, and Related Duties, $F(2, 74) = 4.10, p = .021$. Post hoc comparisons using the Bonferroni criterion revealed that outstanding schools yielded higher values than the requiring improvements schools (Table 8). It should be noted that Professionalism SE was marginally not statistically significant ($p = .053$) (Table 9).

	Outstanding	Good	Satisfactory
<i>Collective Efficacy</i>			
Teaching Strategies	7.89 (.98)	7.65 (1.08)	7.02 (1.15)
Students' Discipline	8.07 (1.12)	7.86 (1.01)	7.22 (.83)
<i>Self-Efficacy</i>			
Professionalism	8.57 (.53)	8.16 (1.14)	7.70 (1.09)
Teaching Practices	8.46 (.56)	8.00 (1.13)	7.20 (1.35)
Classroom Management	8.17 (.95)	7.74 (1.03)	7.50 (1.94)
Teacher Support	8.47 (.50)	7.94 (1.15)	7.43 (2.31)
Related Duties	7.44 (2.08)	7.38 (1.80)	5.37 (3.14)

Table 9 - Means and descriptive statistics Collective Efficacy and Teachers' Self-Efficacy across quality of school

Quality of teaching. One-way ANOVA using assessment of school teaching as independent variable with three levels (outstanding, good, satisfactory/requires improvement) showed significant differences only on Teaching Practices, $F(2, 74) =$

3.56, $p = .033$. Post hoc comparisons using the Bonferroni criterion revealed that outstanding schools yielded higher values than the requiring improvements schools (Table 10).

	Outstanding	Good	Satisfactory
<i>Collective Efficacy</i>			
Teaching Strategies	7.82 (.98)	7.69 (1.06)	7.13 (1.29)
Students' Discipline	8.00 (1.16)	7.91 (1.00)	7.30 (.94)
<i>Self-Efficacy</i>			
Professionalism	8.54 (.56)	8.18 (1.12)	7.83 (1.17)
Teaching Practices	8.42 (.57)	8.01 (1.11)	7.38 (1.47)
Classroom Management	8.10 (.98)	7.76 (1.02)	7.70 (1.99)
Teacher Support	8.47 (.51)	7.95 (1.11)	7.55 (2.36)
Related Duties	7.53 (2.18)	7.35 (1.77)	5.33 (3.11)

Table 10 - Means and descriptive statistics Collective Efficacy and Teachers' Self-Efficacy across quality of teaching

Quality of Leadership/Management. One-way ANOVA using assessment of schools' quality of leadership/management as an independent variable with three levels (outstanding, good, satisfactory) showed significant differences only on Teaching Practices, $F(2, 74) = 4.08$, $p = .021$. Post hoc comparisons using the Bonferroni criterion revealed that outstanding schools yielded higher values than the requiring improvements schools (Table 11).

	Outstanding	Good	Satisfactory
<i>Collective Efficacy</i>			
Teaching Strategies	7.88 (.98)	7.63 (1.06)	7.13 (1.30)
Students' Discipline	8.05 (1.12)	7.86 (1.00)	7.30 (1.08)
<i>Self-Efficacy</i>			
Professionalism	8.58 (.54)	8.13 (1.14)	7.83 (1.17)
Teaching Practices	8.44 (.58)	7.97 (1.13)	7.38 (1.46)
Classroom Management	8.13 (.95)	7.72 (1.03)	7.70 (1.99)
Teacher Support	8.48 (.50)	7.90 (1.13)	7.55 (2.35)
Related Duties	7.56 (2.08)	7.32 (1.80)	5.34 (3.10)

Table 11 - Means and descriptive statistics Collective Efficacy and Teachers' Self-Efficacy across schools' quality of leadership/management

Position in school hierarchy. Again one-way ANOVA using teachers' position in school hierarchy as an independent variable with four levels (non -leadership, middle leadership, senior leadership, heads of the school) showed significant differences

only on the two collective self-efficacy, $F(3, 73) = 6.17, p = .001$ for CE for Teaching Strategies and $F(3, 73) = 5.51, p = .002$ for the CE for Student Discipline. Moreover, the Related Duties also reached statistical significance, $F(3, 73) = 2.81, p = .046$. With regard to the CE for Teaching Strategies post hoc comparisons using the Bonferroni criterion revealed that: (a) heads of the schools and teachers in senior leadership position yielded higher values in comparison to teachers ($p = .002$ and $p = .034$ respectively) and (b) heads of the schools yielded higher values in comparison to teachers in middle leadership teachers ($p = .026$) (Table 11).

On the other hand, post hoc comparisons concerning the CE for Student Discipline showed that heads of the schools and teachers in senior leadership position yielded higher values in comparison to teachers with no leadership ($p = .003$ and $p = .036$ respectively). Finally, heads of the schools scored higher on Related Duties than teachers with no leadership ($p = .017$) and teachers in middle leadership position ($p = .009$) (Table 12).

	Non leadership	Middle leadership	Senior leadership	Heads
<i>Collective Efficacy</i>				
Teaching Strategies	7.17 (.98)	7.43 (1.21)	8.09 (.87)	8.42 (.59)
Students' Discipline	7.36 (.95)	7.70 (1.28)	8.26 (.73)	8.54 (.49)
<i>Self-Efficacy</i>				
Professionalism	8.04 (.75)	8.12 (1.37)	8.38 (1.03)	8.66 (.48)
Teaching Practices	7.77 (.78)	8.03 (1.28)	8.00 (1.34)	8.64 (.57)
Classroom Management	7.71 (.86)	7.93 (1.29)	7.60 (1.65)	8.29 (.75)
Teacher Support	7.96 (1.13)	8.02 (1.39)	7.80 (1.56)	8.54 (.59)
Related Duties	6.77 (2.13)	6.56 (2.69)	7.38 (1.89)	8.50 (.73)

Table 12 - Means and descriptive statistics Collective Efficacy and Teachers' Self-Efficacy across schools' quality of leadership/management

Received Interventions training. One-way ANOVA was used to examine differences between Collective Self-Efficacy and Teachers' Self-Efficacy across the various levels of interventions training received (None, TEACCH, Mixed, ABA and

other). Results showed significant differences for Teacher Practices, $F(4, 72) = 3.41, p = .014$, and Classroom Management, $F(4, 72) = 2.65, p = .040$. Because of the increased number of comparisons the Bonferroni criterion tends to be conservative and thus the LSD (least squared differences) criterion was adopted on this occasion.

With regards to Teacher Practices post hoc analysis revealed that: (a) those who did not receive any training reported lower scores than those who received Mixed training ($p = .041$) and other training ($p = .021$). Similarly, those who received ABA training also reported lower scores than those received Mixed training ($p = .014$) and other training ($p = .004$). On the other hand post hoc analysis for Classroom management showed that the ABA group scored lower in comparison to TEACCH ($p = .030$), Mixed ($p = .015$) and other ($p = .003$) groups

Received specific ASD Interventions training. One-way ANOVA using received specific ASD intervention as independent variable with four levels (TEACCH, Mixed, ABA and other) did not show any significant differences ($p > .10$). It should be noted that the category None excluded from the analysis because only one participant selected it.

Preferred intervention. Analysis of variance using preferred intervention as independent variable with two levels (yes - no) did not show any significant differences ($p > .10$).

Training for implementing intervention. Analysis of variance using training for implementing intervention as independent variable with two levels (yes - no) showed a significant difference only for the Related Duties ($t_{75} = 4.20, p < .001$). Mean values indicated the teachers who did not favour training for implementing intervention ($M = 3.08, SD = 2.69$) had lower scores than their counterparts ($M = 7.36, SD = 1.95$).

Behaviour Training. All but one of the participants had received Behaviour training and no statistical analysis was performed using this variable.

ASD Qualifications. Analysis of variance using ASD qualifications as independent variable with two levels (None and all others) did not show any significant differences ($p > .10$).

Age of participants. Spearman's coefficient was used to examine the association between age categories and Collective Efficacy and Teachers' Self-Efficacy. Results showed moderate positive correlations with Classroom Management ($rho = .314$), Professionalism ($rho = .319$), and Teacher Practices ($rho = .300$).

Years of teaching. Spearman's rho was used to examine the association between previous teaching experience and Collective Efficacy and Teachers' Self-Efficacy. Results showed moderate positive correlations with CE Student Discipline ($rho = .243$), Classroom Management ($rho = .325$), Professionalism ($rho = .400$), Teacher Practices ($rho = .278$) and Teacher Related Duties ($rho = .281$).

Years of teaching in the current school. Again Spearman's coefficient was used to examine the association between teaching experience in the current school and Collective Efficacy and Teachers' Self-Efficacy. Results showed moderate positive correlations with Professionalism ($rho = .254$) and Teacher Support ($rho = .274$).

Years of teaching ASD. Spearman's rho was used to examine the association between years of teaching ASD and Collective Efficacy and Teachers' Self-Efficacy. Results showed moderate positive correlations with CE Student Discipline ($rho = .253$), Classroom Management ($rho = .392$), Professionalism ($rho = .469$), Teacher Practices ($rho = .392$) and Teacher Related Duties ($rho = .345$).

Years of teaching ASD in the current school. Spearman's coefficient was used to examine the association between years of teaching ASD in the current school and Collective Efficacy and Teachers' Self-Efficacy. Results showed moderate positive correlations with CE Student Discipline ($rho = .259$), Classroom Management ($rho =$

.382), Professionalism ($\rho = .434$), Teacher Practices ($\rho = .357$), Teacher Related Duties ($\rho = .349$) and Teacher Support ($\rho = .239$).

Frequency of supervision. One-way ANOVA using Frequency of Supervision as independent variable with five levels (Termly, Half termly, Twice per year and Once per year and Never) did not show any significant differences ($p > .10$).

4.6 Summary of findings

The quantitative analysis produced the following findings:

Area	Findings
The main scores for the subscales	<ul style="list-style-type: none"> • Generally, high • The highest mean score was observed for the 'Professionalism' (TSDES) • The lowest mean score was observed for the 'Related Duties (TSDES)
Overall associations amongst TCEBS and TSDES subscales	<ul style="list-style-type: none"> • Significant and positive, ranging from moderate to strong
Correlations amongst TSDES subscales	<ul style="list-style-type: none"> • Strongest correlation was observed between 'Professionalism' and 'Teaching Practices' weakest between 'Classroom Management' and 'Teacher Support'
Association among subscales of the two instruments lower	<ul style="list-style-type: none"> • Higher values were observed between 'Teaching Strategies' and 'Teaching Practices' • Lowest between 'Students' Discipline' and 'Teaching Support'
Overall demographic characteristics influence	<ul style="list-style-type: none"> • Significant differences were observed amongst the influence of participants background characteristics on Collective Efficacy and Self-Efficacy
Type of provision	<ul style="list-style-type: none"> • No significant differences on Collective Efficacy and Teachers' Self-Efficacy
Level of education	<ul style="list-style-type: none"> • No significant differences on Collective Efficacy and Teachers' Self-Efficacy
Quality of school provision	<ul style="list-style-type: none"> • Significant differences on Teacher Practices, and Related Duties • Professionalism Self-Efficacy was marginally not statistically significant
Quality of teaching	<ul style="list-style-type: none"> • Significant differences only on Teaching Practices, outstanding schools yielded higher values than the requiring improvements schools
Quality of Leadership/Management	<ul style="list-style-type: none"> • Significant differences only on Teaching Practices- outstanding schools yielded higher values than the requiring improvements schools

Position in school hierarchy	<ul style="list-style-type: none"> • Significant differences only on the two collective self-efficacy for Teaching Strategies and for Student Discipline heads of the schools and teachers in senior leadership position yielded higher values in comparison to teachers and middle leaders
CE for Student Discipline showed	<ul style="list-style-type: none"> • Heads of the schools and teachers in senior leadership position yielded higher values in comparison to teachers with no leadership
Received Interventions training-	<ul style="list-style-type: none"> • Results showed significant differences for Teacher Practices and Classroom Management. Those who did not receive any training reported lower scores than those who received Mixed training. • Classroom management showed that ABA group scored lower in comparison to TEACCH
Received specific ASD Interventions training	<ul style="list-style-type: none"> • No significant differences
Training for implementing intervention.	<ul style="list-style-type: none"> • A significant difference only for the Related Duties
ASD Qualifications	<ul style="list-style-type: none"> • No significant differences
Age of participants.	<ul style="list-style-type: none"> • No significant differences
Age of participants.	<ul style="list-style-type: none"> • Moderate positive correlations with Classroom Management and Professionalism
Years of teaching	<ul style="list-style-type: none"> • Moderate positive correlations with CE Student Discipline), Classroom Management Professionalism, Teacher Practices and Teacher Related Duties
Years of teaching in the current school	<ul style="list-style-type: none"> • Moderate positive correlations with Professionalism, Teacher Support
Years of teaching ASD	<ul style="list-style-type: none"> • Moderate positive correlations with CE Student Discipline, Classroom Management , Professionalism Teacher Practices (rho = .392) and Teacher Related Duties
Years of teaching ASD in the current school	<ul style="list-style-type: none"> • Moderate positive correlations with CE Student Discipline, Classroom Management , Professionalism, Teacher Practices, Teacher Related Duties and Teacher Support

Table 13- Quantitative findings

Summary of the chapter

This chapter described the first, quantitative phase of the study. The results for self-efficacy, collective efficacy as well as demographical information were analysed through descriptive and inferential statistics and provided results which will be used, in line with the Sequential Explanatory Design, to provide direction to the Second, Qualitative Phase. The second phase is the main phase for this study. The next chapter presents the intermediate phase between quantitative and qualitative phase. It

presents the thinking behind the choices I made regarding results to further explore which led in turn to the formulation of the research questions.

Chapter 5 - Connecting the Quantitative and Qualitative Phases

Introduction

This chapter presents the intermediate phase of the mixed methods study. It explains how the data from the first quantitative phase relate to the second, qualitative stage. The quantitative analysis produced an amount of significant data, as detailed in the previous chapter. This chapter details the thinking process and presents the data which were explored in depth during the second phase and how the research questions were further formulated.

5.1 Aims and Objectives

Integration is a critical feature of any mixed methods study (Johnson and Christensen, 2004; Johnson *et al*, 2007). Johnson and Onwuegbuzie (2004) suggest that essentially any research design occupies a place on a continuum from not mixed to fully mixed, with the exclusive use of either a quantitative or qualitative approach occupying one end of this continuum and fully mixed methods the other. The aim of this intermediate phase was to reflect on the results from the quantitative phase and make decisions about which issues to explore in depth. This phase also aimed at formulating research questions to be answered during the qualitative phase.

5.2 Formulation of research questions

The quantitative results informed the formulation of the interview questions and identified areas to focus on. Due to the limited interview time (30mins) I would not be able to explore further all the quantitative results. Selecting the areas on which to focus was not an easy decision and it took a lot of time and consideration. My own professional interests, my experience as well as gaps in the current literature led me to select the following quantitative findings for further investigation/ exploration. For each of them I explain the reasons for my selection:

1. Significant statistical difference in the self-efficacy and collective efficacy scores between school graded outstanding and those given other grades. Thus, I chose to explore the constructs further in outstanding schools. I found this result striking and I wanted to find out more about what teachers in outstanding schools feel influences their efficacy. I had the scope to use this information later to inform practice. Although it would have been interesting to compare interview responses from both outstanding and non-outstanding schools, I chose to conduct a high number of interviews so that I could explore outstanding schools in depth.

2. Strong correlations were observed between 'Professionalism' and 'Teaching Practice', which are about working with others. With this in mind, I further explored collaboration. Teachers of children with autism have to work in teams and often liaise with other professionals in order to meet the needs of the children. I wanted to explore further what it is about working with other people that made teachers feel efficacious in this area.

3. The association between self-efficacy and collective efficacy was moderate to strong. I decided to explore further how teachers feel about their own self-efficacy in relation to collective efficacy when it comes to pupil outcomes. Again, in the light of teachers working together in teams I wanted to find out what their views are in relation to self-efficacy and collective efficacy on progress and how they thought each construct contributes to pupil outcomes. I found it interesting and important to gather the views of the teachers on this matter because pupil outcomes are of considerable importance but also thinking actively about the two constructs in relation to the same issue which has not attracted a great deal of research.

4. Senior members scored higher in collective efficacy compared to non- senior members. This triggered me to further explore their views on collective efficacy. I wanted to explore more the views of both senior and non -senior teachers regarding their beliefs in the capabilities of the teams. Also because senior staff saw the 'team'

and I wanted to explore that in a micro level with regards to what teachers thought of their capabilities of their classroom teams in teaching children with autism.

5. The mean score for ‘Classroom management’ was the second lowest after ‘related duties’. The latter would be more relevant to pupils requiring personal care. With regards to ‘Classroom management’, behaviour of children with autism can be a challenging part of their education. I wanted to explore more how teachers feel about their capabilities in managing behaviour while also trying to understand whether indeed teachers feel less efficacious in this area and explore the reasons behind it.

6. There was a significant impact of training on self-efficacy. I further explored how teachers feel about the impact of training on their self-efficacy. I wanted to find out how training is related to teachers’ self-efficacy and why they think it increases their belief in their own capabilities and in what areas of teaching.

7. There were moderate to positive correlations between self-efficacy and collective efficacy and years of experience. I wanted to explore how participants felt about their experience in teaching, teaching pupils with autism and how this influences their efficacy. The influence of experience on efficacy has appeared in the literature but has not been explored for teachers of pupils with autism. I wanted to find out what teachers think and how and what type of experience influences their self-efficacy.

8. There is room for further exploration based on the quantitative findings which could formulate the basis for further research. The formulation of the interview questions was further influenced by the literature, my experience in the field of education as well as my own interests in teachers for children with autism. Issues which the literature review indicated as important to be explored are as follows:

- Verbal persuasion including feedback and supervision

- Vicarious learning
- Stress
- Impact of self and efficacy on achievement

My experience in the field of special education and autism, in a variety of positions ranging from teaching assistant to a headteacher, also brought issues worthy of exploration. Those, which for the most part are related to the ones identified above, are as follows:

- Impact of the needs/impairments of the children on teachers' self-efficacy
- Impact of colleagues' efficacy on teacher's own efficacy
- Collaboration

The quantitative data, the literature and my own personal experiences led to the formulation of research questions as follows:

1. Do teachers think that self-efficacy impacts on their teaching and pupil achievement?
 2. Do leaders impact on teachers' self-efficacy?
 3. Do colleagues impact on teachers' self-efficacy?
 4. Does experience impact on teachers' self-efficacy?
 5. Does pupils' behaviour impact on teachers' self-efficacy?
 6. Does managing staff affect teachers' self-efficacy?
 7. Does teachers' self-efficacy vary?
 8. Do perceptions of stress impact on self-efficacy?
 9. What do teachers think about collective efficacy in their school?
10. Do Ofsted graded outstanding schools influence teachers' self-efficacy?

Summary

This short chapter described the transition between the quantitative findings and the qualitative stage. Although this chapter is short the importance of this intermediate stage was paramount in the development of the qualitative phase. This phase required a lot of thinking and careful consideration. Not all the findings could be explored due to time limitations. However, this allowed further exploration of the

chosen findings. What follows is an in depth thematic analysis and discussions of the qualitative data.

Chapter 6 - Qualitative Phase

Introduction

The preceding chapters reviewed the literature and identified gaps in efficacy research. Chapter 3 provided an overview of the methodology followed by Chapter 4 which provided an analysis of the first quantitative phase of this study. In line with the Explanatory Sequential design which this study employed, a qualitative phase took place after the analysis of the survey data. The previous chapter described the transition between the two phases. This chapter explores the qualitative phase of this study. This chapter provides the aims and objectives, the research questions of the second phase as well as the sampling and data collection procedures. The main body of this chapter provides a thorough analysis and discussion of the interviews through a process of thematic analysis.

6.1 Aims and Objectives Phase 2

The quantitative results served as an indication in order to provide me with a direction for the second qualitative stage. Whilst considerable information was obtained in the quantitative stage of this study, during phase two semi-structured interviews were used to further explore the findings of the quantitative study. This qualitative phase explains, explores and enriches the quantitative phase of the study providing a fuller, truer picture of the phenomenon (Creswell & Plano-Clark, 2007; Glesne, 2006). This chapter aims to provide answers to the research questions.

Research questions

As described in the previous chapter the research questions following the quantitative findings, influenced by the literature and personal factors as well as a lot of deliberation and reflection were formulated as follows:

1. Do teachers think that self-efficacy impacts on their teaching and pupil achievement?

2. Do leaders impact on teachers' self-efficacy?
3. Do colleagues impact on teachers' self-efficacy?
4. Does experience impact on teachers' self-efficacy?
5. Does pupils' behaviour impact on teachers' self-efficacy?
6. Does managing staff affect teachers' self-efficacy?
7. Does teachers' self-efficacy vary?
8. Do perceptions of stress impact on self-efficacy?
9. What do teachers think about collective efficacy in their school?
10. Do schools graded outstanding by Ofsted influence teachers' self-efficacy?

6.2 Qualitative Design

As discussed in previous chapters there is a notable absence of in-depth qualitative inquiry exploring the efficacy of teachers of pupils with autism. As described and discussed in Chapter 3, twenty-four semi-structured interviews were carried out with participants from outstanding schools in Greater London as described below. The qualitative phase took six months to gather the interview data and a total of one year to complete.

6.3 Participants

Participants were teachers and member of senior leadership teams of five outstanding schools (Table 14). A list with the profiles of the participants can be found in Appendix 5. Participants were enlisted from schools in Greater London. The choice of location was chosen for three reasons. First the majority of the schools who took part in Phase 1 were based in the Greater London area. Secondly, the analysis did not reveal any relationships or correlations between self-efficacy, collective efficacy and location and lastly it was more viable to reach the participants in terms of time and cost as I also live within the Greater London area.

Following the analysis of the questionnaires, twenty-four teachers from five outstanding schools agreed to be interviewed.

	School	Participants	Roles
1	ASD School	6	Assistant head Assistant head Assistant head Senior teacher Teacher Teacher
2	ASD Unit (Mainstream)	5	Deputy head Assistant Head Teacher Teacher Teacher
3	ASD focused primary	6	Head of school Senior teacher Senior teacher Teacher Teacher Teacher
4	ASD School	4	Senior teacher Teacher Teacher Teacher
5	ASD Unit (special)	3	Assistant Head Senior teacher Teacher

Table 14 - Interview participants

6.4 Data collection

Data collection took place over a period of six months. I chose a sample of schools graded outstanding by Ofsted with different types of autism provision as described above. I contacted the head teachers asking for permission. After permission was granted I visited the schools at a mutually convenient time. All participants were guaranteed confidentiality and anonymity as well as their right to withdraw from the study. Consent was sought and received from all participants and recorded during the interviews. All interviews in each school took place during a single visit. The interviews took place in a quiet room and lasted for almost 30 minutes each. An extract from a participant interview is shown in Appendix 7.

The interviews were recorded on an electronic word recording device and transcribed into text (transcript). Prior to the interview the participants were asked to complete the survey questionnaires. Not all participants had time to complete all three questionnaires (demographic, self-efficacy and collective efficacy) but all of them completed the demographic questionnaire. The data from the self-efficacy and collective efficacy was not used as not all the participants responded. The transcripts of the conversations were verbatim. Every effort was made to capture non-verbal communications such as hesitation, excitement and long pauses. Cohen *et al.* (2007) acknowledge that few researchers capture non-verbal communication and suggest that the interview is a social encounter, not merely a data collection exercise; the problem with much transcription is that it becomes solely a record of data rather than a record of a social encounter. The role of the researcher is thus very important in providing accurate meaning and ensuring that the message which gets across is in line with what the interviewee intended to communicate. The researcher's experience of being part of the interview process puts him or her in a privileged position to realise the meaning and intention of the interviewee's utterances (Kvale & Brinkmann, 2009). In order to preserve some of the non-verbal communication elements I kept notes of the interviews. These were taken after and not during the interview to prevent impacting on the flow of the communication. I referred to these notes after during the transcription which enabled me to build a profile for each participant (Appendix 5).

6.5 Data analysis

In qualitative research it is accepted that the researcher has a key role in interpreting the data, thus 'the subjectivity of one's observations is of paramount importance throughout the research process' (Miles & Huberman, 1994:6). With this in mind, it was important to consider how my background, experiences, views and values impacted on the way I interacted with the participants and the way I interpreted the data. It was not always an easy task to draw the line between the active professional and the researcher and not allow my own opinions to guide the direction of the interpretation of the data. Often, I found myself making assumptions about what the

participants meant because I believed I was thinking the same way. This was more common during the interviews and the transcription stage. Once I began the analysis and the coding process and attaching meaning to word and phrases it became easier to become objective. The interpretivist paradigm guided my approach to the analysis of this phase in particular. I acknowledged that there is no objective reality or truth 'out there' waiting to be discovered. I entered the teachers' world, used my background to understand them and focused on listening and interpreting the teachers' views and perspectives of their self and collective efficacy.

6.5.1 Thematic Analysis

I chose to follow a thematic analysis approach to analyse the qualitative data. Braun and Clarke (2006:79) define thematic analysis as: 'A method for identifying, analysing and reporting patterns within data'. The reason for this choice is because this type of analysis illustrates the data in great detail and deals with diverse subjects via interpretations (Boyatzis 1998). Thematic analysis allows the researcher to immerse themselves deep into their data and through thorough procedures to make their own interpretations. It provides a framework like the one suggested by Braun and Clarke (2006), which is a useful pathway to follow providing direction but at the same time it is entirely down to the researcher to decide how to interpret their data. I felt this provided freedom but at the same time responsibility towards the participants and their views. According to Braun and Clarke (2006:87) there are six steps to the process of thematic analysis process: becoming familiar with the data, generating initial codes, searching for themes, reviewing themes, defining and naming the themes, and finally, producing the report. The analysis of the data took place in four stages which incorporated the steps as described below (Table 15).

First Stage -Immersion

Braun and Clarke (2006:27) suggest that is vital for the researcher to immerse themselves in the data to the extent that they are familiar with the breadth and depth of the content. According to them immersion involves 'repeated reading of the data, and reading the data in an *active* way - searching for meanings, patterns and so on'.

The first step of the analysis was to read each of the transcripts thoroughly at least twice. While I was reading the transcripts I also referred to notes I had kept during the interviews relating to characteristics of the school, stance of the participant, patterns of speech, feelings and comfort in elaborating on their issues. These notes also acted as reminders which later informed the discussion. At this stage I also highlighted statements which I found particularly interesting. I made notes next to the text and I also started developing some codes.

Stages of analysis	Stages by (Braun & Clarke, 2006)	Description of the data analysis
Immersion	Immersion	Transcription of the data, reading the transcriptions, mapping the answers, analysis of the responses to actual questions, not down initial codes
Coding	Generating initial codes.	Identifying initial codes of the data, re-developing codes, recording codes on the spreadsheet, attaching in a systematic way across the entire data set, collate data relevant to each code.
Themes	Searching for themes.	Grouping of codes into potential themes, grouping of all data relevant to each potential theme.
	Reviewing themes.	Review of the codes attached to each theme. Generate thematic map of analysis.
	Defining and naming themes.	On-going analysis to refine each theme, what each theme represents, attaching representative quotes to themes as well as contextual information of the participants.
Writing up & discussion	Producing the report.	Writing 'what participants actually talked about' for each theme, attaching quotes, analysing the responses. Relating back to the analysis to the research questions and discussing the themes in relation to the literature

Table 15 - Stages of thematic analysis

At this stage, and as part of my immersion into the data, I developed an Excel spreadsheet to help me organise the data (Table 16). In its initial form the columns were: participants (coded), role in school, question, answer, comments and quotes. I also started colouring and highlighting again. This table eventually became my codebook and helped me organise codes and themes and associate quotes with those as well.

After I developed this spreadsheet it occurred to me to use the filters and arrange the cells by question in order to see what and how each participant responded to the questions. This, perhaps unorthodox approach, allowed me to get an even better flavour of the responses. I could also see how participants with different years of experience or position responded to the questions. After I had read all the responses to each of the questions I wrote a short summary in which I also included ‘outliers’, responses which were markedly different to the rest. During this, rather laborious process, the development of codes started. I would say that I moved from ‘what the participants said’ to ‘what they actually talked about’. As Coffey and Atkinson (1996:80) proposed:

‘There are no formulae or recipes for the ‘best’ way to analyse the stories we elicit and collect...Such approaches also enable us to think beyond our data to the ways in which accounts and stories are socially and culturally managed and constructed. That is, the analysis of narratives can provide a critical way of examining not only key actors and events but also cultural conventions and social norms.’

AGE	EXP	EXP ASD	ROLE	Participants	Answers	Actual questions	comments	Code 1	Code 2	Code 3	
30-39	11 to 15	11 to 15	P-ONE		P-ONE-0	Participant: female, phase leader, 2 and school independent					
			P-ONE	ST	P-ONE1	P1: Oh and awful lot. Ahhah. If you have the confidence and the belief that you can do something then I think it is much more likely that you can make happen. Then if you go into a situation, I don't know know if you don't feel you can deal with challenging behaviours easily then you go into a class with more challenging behaviours , if you have that doubt I don't think it will successful . Yeah, definitely has a big impact	ED- how do you think self-efficacy affects the ways someones' teaching?	confidence	vicarious	learning from others	
			P-ONE	ST	P-ONE2	P: yes, absolutely. The children will pick on these little cues as you whether you feel of how confident you feel when you are teaching them, and the more confident you are I think and the more self belief you ve got I think you will be alke to more animated, more enthusiastic about what are you doing and that will affect the children's progress	Ed: how do you think self efficacy has a n impact on the childs progress and achievement	link witP-TWO's quote re being animated	confidence	chn pick up on confidence	animated

Table 16 - Coding Extract

Second stage - Coding

The second stage of the analysis involved the identification of codes and the process of coding the responses. According to Bryman and Bell (2003) and Kassirjian (1977) the unit of analysis may be significant actors, words, subjects, themes, dispositions, paragraphs, meanings, theoretical constructs, characters or anything that constitutes an entity that can be seen as having own existence, a unified meaning and boundaries. Kelle (1997:4) has argued that ‘the application of a coding paradigm or of theoretical codes to empirical data is based on a/the logic of discovery which is neither inductive nor deductive’. I initially attempted to use NVivo Software for coding but due to technical difficulties it was proving difficult. Instead, I used the Excel spreadsheet I had already created, I read the transcript again word by word, sentence by sentence trying to attach meaning to the words. I highlighted keywords. These keywords were the initial codes. While trying to identify the quotes I kept on going back to the research questions to remind myself which comments were relevant to the research questions. With this in mind I developed some initial codes which were a) experience, b) management, c) behaviour, d) stress, e) factors E and C (impacting on self-efficacy and collective efficacy), g) leaders, h) collaboration. I attached a colour to each initial code and I highlighted the responses accordingly.

I then read the transcripts again and I started creating more codes e.g. mastery, confidence, motivation, respect, learning from others, training. Those codes were also included in the spreadsheet. After I had read the transcripts several times and reorganised codes, rephrased some and grouped others, responses that were not relevant were hidden from the spreadsheet. Dey (1993) points out that creating categories is not simply bringing together observations that are similar or related; instead, data is being classified as ‘belonging’ to a particular group and this implies a comparison between this data and other observations that do not belong to the same category

The next task was to develop the codebook which is sometimes referred as the ‘content analysis dictionary’ or ‘coding manual’. (Table 17) Bryman and Bell (2003)

refer to this is a ‘statement of instructions to coders’ specifying the categories (‘codes’) and a set of explicit rules of how the text will be classified in each category.

Participant	Code	Inclusion Criteria	Key words	Extract
<i>P-THREE</i>	<i>feedback</i>	<i>Any comments received on their teaching by senior or other staff as a result of observations or under different circumstances</i>	<i>Feedback, result of observation, line managers’ comments,</i>	<i>Like in any school you feel that you are not capable because of a small thing that one person has said and that can really change things and that is a real shame because you kind of need that whole ‘that’s really good’ and you kind of need those things ‘ it has to be done in a constructive ways.</i>
<i>P-THREE</i>	<i>collaboration</i>	<i>Indication of working and thinking together on the teaching of the children</i>	<i>Together, with a colleague, linking up</i>	<i>I am always trying to link up with my year group and other year group teachers cause I think that’s really helpful if you plan together and collect your ideas together but some people work differently so that’s I suppose it is up to them really</i>

Table 17 - Codebook extract

After the codebook was generated some codes were further merged; for example, ‘self -doubt’, ‘self -belief’, ‘confidence’ was all merged into one code called ‘confidence’. Repeated patterns of meaning were identified and these patterns or themes were recorded in a separate document (Braun and Clarke 2006). The codes were collated and tentative themes started to be generated.

Third Phase – Themes

The decision of the themes came after a thorough examination of the codes which led to the development of the themes. Some of them were codes which became themes such as ‘experience’. An example of how codes developed to themes is shown below (Table 18). The different fonts in the codes were used to highlight the text in the transcriptions they corresponded to for easier recognition. Connecting codes is the process of discovering themes and patterns in the data (Crabtree and Miller, 1999). Braun and Clarke (2006:82) propose that a theme ‘captures

something important about the data and represents some level of patterned response or meaning within the data set'. According to the same authors a theme also expresses something important regarding the data which relates to the research question, and makes up some level of patterned response or meaning within the data set.

Identifying themes and discrete categories has not been an easy and straightforward task. There was such richness in the material which I wanted to capture and report. On the other hand, decisions had to be made as to what themes were relevant to the research questions.

All codes relating to each theme were collated and checked to ensure that the themes were linked to the codes and that they made sense. The initial themes were reviewed and some of these themes formed a coherent pattern (Braun & Clarke 2006). Developing discrete themes included the challenge of overlapping themes. It was difficult to try and isolate themes without a degree of overlapping. An example of this is when teachers were talking about the challenges of managing children's behaviour and stressful situations they also related it to experience. The themes were developed in line with the overall research questions, theoretical and philosophical underpinnings of the study (Attride-Stirling, 2001).

EXPERIENCE	VICARIOUS	SUPPORT	EMOTIONAL STATES	COLLABORATION	CHILDREN	VERBAL PERSUASIONS
LEARNING THROUGH DOING	Modelling	Available Support from leaders	Pressure	Collaboration	Changes	what others say/think
Mastery	VICARIOUS	Training	WORKLOAD	Talking to people /emotional support	Children are deskilling	Feedback
Experience	Respect	Coaching	morale	Communication	Knowing the children	Verbal persuasion
	LEARN FROM OTHERS	supporting others	TIME OFF	impact of se on team	BEHAVIOUR	
	others SE		STRESS	Ask for help		
		Empowering people	Doubts	Being heard		
		understanding people	7. EMOTIONAL STATES	Ok to make mistakes		
		Being valued /value	Failing affects confidence			
		SEEKING SUPP	Reflection			
		freedom	Personal factors			
		management	Responsibility			

Table 18 - Development of themes

While exploring self-efficacy and collective efficacy participants spoke about a variety of factors. The final categorisation of themes was also influenced by the literature on the sources of self-efficacy as detailed in Chapter 2. The sources of self-efficacy were listed as 1) Vicarious, 2) Social or Verbal Persuasion, 3) Emotional and Psychological States and 4) Mastery experiences.

As noted earlier, a degree of overlap occurred between the themes. In addition, participants elaborated on some themes more than others. Even though it is not entirely possible to quantify the responses, there was a difference in the amount of time the participants spoke about certain issues, hence some themes appear to be 'bigger' than others in terms of responses and significance. The difference in 'sizes' of the themes is not clear on Figure 5 because some codes such the one for 'experience' and 'vicarious learning' which then became themes appeared too often in the text. The order of the themes is as follows:

1. Children
2. Experience
3. Support and Collaboration
4. Vicarious learning
5. Verbal Persuasion
6. Emotional states

1. *Children:* Participants spoke extensively about the challenges they face educating children with autism. The way children with autism primarily affect teachers' self-efficacy was a prominent theme. Teachers spoke about the impact of challenging behaviour, the importance of knowing the children and establishing relationships as well as their views on progress and achievement in relation to self-efficacy.

2. *Experience:* Participants discussed not only mastery but generally having been exposed to a variety of things through the years. It should be noted, as it is also discussed later in this chapter, that teachers of pupils with autism are faced with

different challenges compared to mainstream teachers largely associated with elements of change and unpredictability in children's behaviour. This theme explores the effects of the teachers' experiences, as in teaching situations they have come across in the past and not 'accomplishments' which is the term Bandura used to describe this category. This category/theme will be therefore called 'Experience'.

3. Support & Collaboration: Participants spoke extensively about the effect and importance of working with others and support on their efficacy. The word 'team' was one of the mostly used in the interviews. In this section participants spoke about how teamwork, collective efficacy as well as the importance of the latter on children's progress.

4. Vicarious learning: Participants spoke about the importance of learning from others. There was very much the element of getting ideas from others and they also discussed how seeing how others' efficacy high or low in certain tasks is affecting theirs.

5. Verbal Persuasion: Participants discussed feedback from observations and how comments from their managers, colleagues and parents affect their self-efficacy.

6. Emotional states: Participants discussed the impact that different emotional states such as stress have on their efficacy as well as their whole profession as also attrition was discussed.

After the exploration of the themes a summary of the self-efficacy and collective efficacy in the five outstanding schools which were visited during the qualitative phase is analysed and discussed.

Note: In the following sections of this chapter references are made to the number of participants with regards to particular response. On occasions quantifiers instead of numbers are used to refer to the population of participants. For purposes of clarity, I

note that in this chapter 'majority' represents 80%+, 'half' represents 50%, 'some' represents 30% and 'few' represents 20% of the participant's population.

6.5.2 Analysis of the themes

Theme 1. Children

The challenging nature of working with children with autism led to the 'children' forming a prominent theme. There is a considerable overlap amongst the themes. Despite the overlap, the way children's characteristics impact on teachers' efficacy came through very strongly during the interviews and hence formed a prominent theme. Participants spoke about the importance of building relationships with the children and being aware of their individual needs. This section explores those views as well as the participants' views on efficacy in relation to children's behaviour and progress.

Relationships with children

The majority of the participants discussed the importance of knowing the children and building relationships with them. Participants felt that in order to feel efficacious and confident to teach children with autism they had to feel that they are aware of their needs and triggers. Some participants also recognised that certain children may work with adults other than themselves and they stated that this was not impacting on their own self-efficacy or morale.

While working with the children and getting to know them and spending time it gets better. You feel better about yourself teaching them...It's like running; if you keep running you stay fit...The moment you dive you lose the feel...If you didn't work with them you lose that feel the self- efficacy comes with working with them. (P-THIRTEEN)

Senior leaders spoke about the fact that they do not have a full time class and therefore by not spending a lot of time with the children they often miss the opportunity to build relationships with them. They spoke about how this affected their teaching self-efficacy. Three of the leaders responded that time out of class had

a negative impact on their self-efficacy. They felt also that it made it more difficult for them to be able to provide advice to teachers.

Because you don't have that relationship with them and they are quite hard to work with children they don't necessarily respond to you and if you don't know them very well and you are asking them to do something and they aren't responding to you feeling deskilled...I do worry that as the years go on I don't want to lose that confidence. I definitely need to stay in touch, I do dinner duties, I need to do that for my own efficacy definitely. (P-FOUR)

Progress

In relation to progress participants discussed whether they felt their self-efficacy has an impact on children's progress and also how seeing the children making progress or regressing affects their self-efficacy.

Nearly all teachers felt that lack of progress by children had a negative impact on their self-efficacy. Participants mentioned that when children regress they tend to question their own abilities and also get stressed. Most of them acknowledged that children's needs, moods and behaviours change but they will still at times question their own self-efficacy. Participants mentioned that with time and experience lack of progress had less of an effect on their self-efficacy which will be further explored later in this chapter.

Not being able to see progress and just feeling like you are banging your head against a brick wall and what is the point in what you are doing ... (P-FOUR)

All participants also felt that feeling efficacious has a direct impact on progress and achievement. This means that when teachers were efficacious they felt this would lead to progress and also, almost in a cyclical way, seeing children making progress would enhance their self-efficacy further.

The children probably they have higher achievement because you are more able to put the right strategies in place or use your time effectively... to plan...you believe you can do it. (P-SEVENTEEN)

One senior leader made an interesting remark on how she thought self-efficacy affects teaching. She saw it as a combination of parameters.

I think pretty much all teaching is about confidence and erm....is a combination of knowledge, skills and understanding and how all combines together with their confidence ...all teaching is about being an actor.... putting the jigsaw together and sharing it with your team. (P-FIFTEEN)

The general consensus was that achievement and progress of pupils are products of team work and collective efficacy. However, most participants said that is important for teams to have a highly efficacious teacher to lead them.

I think (progress) is definitely a team effort, a team effect but if you don't have a teacher to sort of move that forward if you have a weaker team you are not going to get the same effect. You have to sort of be in a managerial role of the whole team because you cannot always depend on them fulfilling their roles themselves it is definitely a team effort but you do need an effective teacher, somebody who is leading the team. (P-SEVENTEEN)

I think is more about the teacher, if the teachers haven't got a high sense of self-efficacy and if the teacher is not interested at the end of the day the team...she is not gonna motivate the team, the team aren't going to do anything. But then again, if you don't have a good team behaviour you, you cannot get anything done so...I suppose is interlinked but you need a teacher with high self-efficacy to drive everyone forward. (P-NINETEEN)

Behaviour

Participants identified managing behaviour as an area, within the challenges of teaching children with autism, which has the most impact on their self-efficacy.

Behaviour as the most impact on self-efficacy! Not being able to see progress and just feeling like you are banging your head against a brick wall and what is the point, I am not getting anywhere and certainly if you have children with challenging behaviour in your class because everyone knows that you have to sort out behaviour before you can sort the learning and that as a year goes on you feel you are still at a behaviour level that can be very deskilling. (P-FOUR)

One participant, a senior teacher, also highlighted the importance of feeling capable of managing behaviour and she distinguished this from teaching self-efficacy.

You may have your behaviour under control but if there is no learning happening then what's the point and great for them to know how to use different behaviour strategies for difficult behaviours this is what we want them to achieve in their lives but we are also here to learn and through communication and through independence all those other things...so...and if it is the other way round if the teachers are not confident with the behaviour and she is confident with her planning and lessons and pitching at the right level for the pupils in her class I almost feel its....the behaviour will sometimes will take over and it will flip the balance over so you need to have that balance because really if you have the behaviour under control then learning can happen but if don't have the confidence in teaching at the right level then you will just have a calm class but the children will not progress. (P-SIXTEEN)

The majority of participants mentioned that their self-efficacy in managing behaviour developed through the years, with experience and with dealing with different and difficult situations. This will be further explored in the following section 'experience'

Looking back when I was a newly qualified teacher you do, cause you do think, if they don't make progress I am a rubbish teacher, but really sometimes staying the same is progress and having the confidence in yourself to kind of accept that and they do often make progress and then some behaviour may start again and then...it's like that thing three steps forward four steps back with our students. (P-TWENTY)

The issue of knowing the children and realising that their autism profile can often be 'spiky' led teachers to not 'take it personally', as one of them mentioned, when the children did not make progress. Teachers understood that children may regress in terms of their behaviour and not (necessarily) because of the quality of teaching.

If it doesn't work, we are going back to the drawing board and try something else but it doesn't really affect me because I am, I kind of usually know that something happened at home unless is something particularly that has happened through something that I have done or....said accidentally or something but it is usually something that they are working through. (P-THREE)

There was however one participant, a young female teacher, who had a student with very challenging behaviour that did not improve for a year. This made her question her abilities and contemplate leaving her job.

Participants also found that their efficacy varies. Behaviour was one of the areas participants found their efficacy to be different compared to other areas.

There are always things that you are stronger at and it does feel that you are stronger than others and I have definitely developed in terms of like behaviour management and things like that something I am really interested in and over the years it's been you know I always had the most difficult children because that was seen as my strength while when I work in with the more able groups I find that here more ...I am not really that used to doing that. I do struggle with things like that and this is when I don't feel so confident and then they will have a good day and my efficacy goes up again. (P- TWENTYFIVE)

Summary of findings:

1. Lack of progress may have a negative impact on teachers' self-efficacy.
2. Teaching children with autism relies on teamwork and the capabilities of the team. Progress is more related to collective efficacy than self-efficacy but teams need to be led by efficacious leaders.
3. Efficacy rises when their teaching has a positive impact on the children.
4. Children's behaviour has considerable impact on teachers' self-efficacy. Teachers feel more efficacious they feel that they are more capable of managing behaviour.
5. Changing and challenging behaviour can cause teachers' self-efficacy to fluctuate.

Discussion - Children

This section explored participants' views on how the characteristics of children with autism they teach, their progress and behaviour affects the participants' self-efficacy. Also, how efficacious participants feel in managing behaviour and the impact they perceive their self-efficacy has on children's progress. Participants confirmed what the literature suggested that the learning needs of students with autism have been

discussed as a challenge in general education and special education teachers confront that may influence their sense of competence (Ruble *et al.*, 2011). Parsons and Lewis (2009) also found teachers often felt overwhelmed by the needs of children with autism. This was also confirmed by the views of the participants. More than half of the participants highlighted the importance of establishing positive relationships and being aware of the children's needs. In addition, some participants acknowledged that children may respond differently to different adults. This is an important point as children with autism vary widely in their profiles and as a result teaching methods and delivery ought to be highly individualised. The participants added another dimension, discussing the impact that personalised teaching for children with autism has on teachers' self-efficacy, which has rarely been explored.

In terms of progress, half of the participants, and nearly all of the teachers, responded that when the children are not making progress that has a negative impact on their self-efficacy but it also makes them reflect on their own practice. Also, as it is discussed in a later section about mastery of experiences, some participants mentioned that their self-efficacy rises when their teaching has a positive impact on the children. This finding is close to Ashton's (1984) assertion that teachers with a high sense of efficacy believe that it is their responsibility to see that children learn, and when their students experience failure, they examine their own performance for ways they might have been more helpful.

There has been a body of research supporting that teachers' efficacy is positively associated with students' achievement (Berman *et al.*, 1977, Woolfolk & Hoy, 1993, Ross, 1994, Goddard and Skrla, 2006). Other researchers (Ashton & Webb, 1986; Goddard & Goddard, 2001; Guo *et al.*, 2014) asserted that the relationship between teachers' self-efficacy and child achievement are indirect and that learning and achievement are influenced through classroom quality. This research cannot establish a numeric association between efficacy and progress. Nevertheless, quantitative results indicated that teachers' self-efficacy and collective efficacy were higher in schools rated outstanding by Ofsted or where children's progress was also

rated as outstanding. If progress and achievement are not rated as outstanding the overall rating of the school cannot be outstanding. The self-efficacy of the participants interviewed was not quantitatively measured. Participants however responded that they felt their self-efficacy is highly associated with progress. This adds to the limited research on the association between teachers' self-efficacy and progress of children with autism. Such findings should however be treated with caution as children with autism do not progress in the same way as their typically developing peers. Further, there are not yet clear well established guidelines of what constitutes good progress in special education and autism in particular (apart from the 2009 Progression Guidance document the reliability of which has been questioned due to the complexity of the children's' needs). As explained in the first chapter, the judgment Ofsted made on the progress of children with autism can be arbitrary and not necessarily judged in the same way as it is judged by the individual school and staff who know the journey of the pupils best. What should be taken into account is the teachers' views on the progress of their own students and how this is related to their self-efficacy. As discussed above, most teachers felt that when they feel efficacious they are more able to make a difference and have an impact on their students. Also, the fact the children with autism may have spiky profiles, in the sense that their achievement may vary across a range of different categories, which for children with autism these can be broad and extreme compared to typically developing children, and they may not be making progress in all aspects is another reason why the findings ought to be treated with caution. A case study on children's progress accompanied with a measurement of their teachers' self-efficacy could provide more accurate results.

Participants reported that progress is more related to collective efficacy than self-efficacy by also highlighting that teams need to be led by efficacious leaders. Participants did not directly discuss whether collective efficacy had an impact on their self-efficacy. This was evident though in Aliakbari and Darabi's (2013) study which showed that when the collective beliefs of the staff to carry out their tasks are high, the individual efficacy of teachers is also higher, thus, affirming a symbiotic

relationship between the two. Ross and Gray (2006) also made the connection between collective teacher efficacy and student achievement. Bandura (1997a) also hypothesised that collective efficacy is likely related to self-efficacy since the perceived sense of group efficacy is related to the individual perceived efficacy of the members of the group. The findings support this hypothesis and also add a dimension to the research combining self-efficacy and collective efficacy of teachers for children with autism. While several studies have been conducted on collective efficacy in schools, most of these studies have been quantitative (Angelle and Teague, 2014). Even though collective efficacy was explored less than self-efficacy in this study it is still a new insight into the field of teachers of pupils with autism as collective efficacy has not been looked at from a qualitative perspective.

In terms of behaviour, participants found that this is an area that has a considerable impact on their self-efficacy. This is not surprising as children with autism, and especially those on the lower part of the spectrum, usually exhibit challenging behaviours. This is in agreement with Rapak and Kazcmarek (2010, in Hofman & Kilimo, 2014) who reported on teachers who claimed that it becomes hard for them to control classroom behaviour when students with different types of disabilities are included in their classroom, especially the ones with multiple disabilities and behavioural problems. However, their research included special needs teachers and not particularly those for children with autism. The findings of this research contribute to the existing literature on efficacy and behaviour by suggesting that when teachers feel more efficacious they feel that they are capable of managing behaviour. Again, this finding would require further quantification of teachers' efficacy.

A few participants mentioned other factors such as mood and children's needs as well as their own confidence. The responses are not surprising for two reasons. The first is that self-efficacy is task specific. Teachers may feel quite confident about their ability to motivate certain behaviours in some students while feeling less competent with others (Ashton, 1984). One may feel highly efficacious to perform

an action but one may have a low belief in one's capabilities to do something else. The second reason is that the profile of children with autism is highly varied and the skillset required for teaching children with autism is subsequently wide. Hence, a teacher may not feel equally efficacious in all areas which includes teaching, planning, behaviour management, staff management as well as dealing with parents and external professionals.

Theme 2. Experience

Teachers' views on the impact of years of experience on their self-efficacy can be broken down into impact on their teaching including behaviour management, managing others and the way they process feedback. Participants were asked directly how they thought their experience affects their self-efficacy. All twenty-four participants felt that experience had an impact on their professional lives and their self-efficacy.

I think experience is one of the biggest, biggest tools in working with the children on the spectrum in various, various erm.. stages where they are on the spectrum and then erm to really prepare yourself to be able and get the time, get the time to look at each child. (P-TEN)

Participants spoke about the impact of experience on their self-efficacy in a number of areas such as teaching, behaviour management and staff management.

Impact of experience on Teaching and Behaviour Management Efficacy

Teachers spoke about the impact of their years of experience on their self-efficacy in teaching. Nearly all the participants said that experience generally made them feel more efficacious. Seven teachers also elaborated on how experience is related to mastery in teaching. They discussed that having experienced different situations in the past made them believe that were more able to deal with the everyday challenges of teaching children with autism. Referring back to their previous mastery experiences as well as being resilient enabled them to restore their levels of self-efficacy.

I think it comes down to experience you know the patternsI know it is difficult but also the experience allows you to know that things don't last forever. ...You just believe you get through to the next step. It is resilience, isn't it. (P-TWENTYFOUR)

Participants also felt that their self-efficacy fluctuates. Ten of the participants discussed the reasons that their self-efficacy levels change. Half of the responses were related to teaching new children at the beginning of the academic year, which was also discussed earlier in the previous 'children' section. Children may plateau or regress at times and experience helps the teachers understand that this can be due to the nature of the children's needs more and it is not necessarily a reflection on the quality of their teaching. They discussed that with experience fluctuations in children's progress made them question their teaching capabilities less. Some participants found that the time it took to get to know the children and to be able to respond to their needs had an impact on their efficacy. Other participants attributed the fluctuation of their efficacy to other factors such as behaviour, children's needs and emotional states.

You see for me is so class or child dependent. Like that example I gave you earlier that was I had already been here for three years my efficacy was linear and I was at a really great place and then it dimples down you get a completely different class and you don't know how to teach them yet... erm... so.... (pause) I don't know... I guess what I have gained over time is a kind of core belief in my own efficacy but that doesn't mean that I cannot be challenged (laugh). I am sure I can. (P-FOUR)

In terms of managing behaviour, teachers found this area to be one of the most challenging parts of their roles in educating children with autism and said that experience played a big role in enhancing their self-efficacy in this area and conversely, lack of experience had a negative impact on their self-beliefs in behaviour management.

I was new and ...you kind of feel a bit helpless...if the child is upset you kind of try to deal with it you can't quite understand what's upsetting him.... (P-TWELVE)

While valuing the impact of experience on self-efficacy, some participants made an important distinction between the types of prior teaching experience that impacted on their self-efficacy. They said that prior experience in mainstream education or teaching children other than those with autism was not conducive to making them feel efficacious about their current teaching roles; in fact it had a negative impact on their teaching self-efficacy when they were faced with challenges of teaching children with autism.

I had been teaching in mainstream for a number of years before I came here and yet coming to this special school environment with children with autism was like starting all over again. (P-SEVEN)

In contrast to the overall picture there were two teachers who felt that experience did not have much impact on their self-efficacy and they attributed that more to ability and self-esteem. They were both teachers with more than fifteen years of experience.

Hmmm, experience not necessarily (impacts on my self-efficacy) because I have met teachers in their early twenties who seem to have a huge sense of self-efficacy even though what they talk about is totally wrong...I don't think is experience that is related to self-efficacy I think self-efficacy is very closely linked to self- esteem. (P-NINETEEN)

Experience and self-efficacy in staff management

Participants spoke about their self-efficacy in managing staff. Special schools employ support staff and teachers as well as senior staff who often have management responsibilities. The majority of participants found managing others a difficult task. While discussing how their self-efficacy in managing people developed, they mentioned experience as a core element.

I remember in my second year teaching in this school, I have been here almost nine years ...I was feeling very low I didn't want to come to school and it was nothing to do with the children or the job it was more the fact that I was inexperienced I didn't believe in myself although I kind of like thought I knew what I was planning paperwork wise, it was the managing of the team that made me feel the responsibility to be able to provide very insecure because I was not secure yet in who I am as a teacher and a person maybe because you are also younger then I remember not wanting to come to school on a Monday. (P-SIXTEEN)

Even though participants favoured collaboration and teamwork, they felt, especially in the early stages of their roles, almost obliged to be able to provide appropriate advice to other staff and have ‘all the answers’. This is the phrase they mostly used, to describe responding to colleagues’ questions and requests for support. An experienced assistant head stated:

I think it is through experience because over years. You know when I first started I would be sort of anxious in myself about those things... I felt that I ought to know the answers having put in that position of authority and I ought to know what to do. I learned with time that is ok not to know and I can be a bit calmer and. (P-SEVEN)

Mastery experiences also played a role in developing participants’ management self-efficacy similar to the development of self-efficacy in teaching. A few participants also discussed the negative impact on their management self-efficacy of staff not taking their advice on board and they mentioned that with experience they felt the impact was less. They discussed how having been through difficult situations in the past made them feel more efficacious and more positive about their current managerial roles.

Yes, of course it does affect your efficacy... When people don’t take your advice...And that is when experience comes in. When I was first a manager and that happened I couldn’t deal with it, it was so personal, I couldn’t sleep and all of that but through experience you learn that a lot of times it is not about. (P-TEN)

Is about...definitely having been there before...even if I cannot necessarily remember specifics you kind of know there is an answer so ...there is more...I can think when I was new in this role and everything was a shock and I was very reactive whereas now....there is always a solution, I am not worried about it anymore. (P-FIFTEEN)

Experience and feedback

Observations and feedback are common for all teachers. Participants were asked how they think observations and feedback affect their self-efficacy, which will be discussed in more detail later under ‘verbal persuasion’. In this section I discuss how the teachers felt experience impacted upon the way they received feedback,

particularly when feedback was less than positive and the impact that had on their self-efficacy.

Three participants mentioned that when they were younger negative feedback affected their self-efficacy negatively, more than it does now. They also mentioned that over time they had become more confident in their abilities to teach and also more assertive to challenge feedback they disagreed with.

Now, at my stage now I think I have enough experience to say what I thought, so now I think I can genuinely say if I thought that was good or whatever outstanding whatever I can definitely make a judgment that I felt that something was good as opposed to terrible whatever erm...so I would probably challenge that if I felt that my observation was good and I was given a lower grade or whatever. I would have the confidence to challenge that. In the past I probably wouldn't and it would have affected my self -efficacy I probably would have waited until I had another observation to make myself feel that's better which is a bit silly really. (P-FIVE)

Experience and workload

While discussing experience some of the participants mentioned that years on the job had an impact on their emotional states and self-efficacy in terms of accumulated challenges and the workload. This impact of efficacy on the emotional states is discussed in detail later in this chapter. However, it is important to mention in this section that some of the participants after a number of years felt overworked and experienced burnout to the point that some of them had decided to take time off.

If I feel overloaded definitely it affects the way I organize myself....Yeah...From having too much....all those years...from....from feeling totally overloaded I have taken time off in the past . (P-TWO)

Summary of findings:

1. Years of experience in teaching children with autism had an overall positive effect on teaching and staff management self-efficacy
2. Prior teaching experience not relevant to autism is not a predictor of high self-efficacy but rather the contrary.
3. Teaching new children can cause self-efficacy to fluctuate.

Discussion - Experience and teachers' self-efficacy

Participants in their vast majority reported that years of experience in teaching children with autism had an overall positive effect on their teaching and management self-efficacy and teaching practice. The quantitative findings revealed a moderate to positive correlation between years of experience and self-efficacy. The interviews revealed that participants felt strongly about the impact of previous experience teaching children with autism had on their current practice and self-efficacy. However, the quantitative result referred to all schools and not just outstanding schools that may explain the difference but this would require further research analysis.

The results are by and large in line with Peebles' and Mendaglio's (2014), study which showed that prior experience with people with exceptional needs was associated with higher levels of self-efficacy. Ghaith and Shaaban's (1999) study revealed that teachers with more than 15 years of experience were less concerned about all the categories of teaching concerns than their beginning and experienced counterparts. The findings of this project support the results of the aforementioned research however due to the small sample no general conclusions can be drawn.

In terms of self-efficacy in teaching, the findings are in agreement with Wahlstrom and Louis' findings (2008) which support the view that years of experience have a clear impact on teaching. A notable difference is that prior experience in non-autism teaching environments is not always conducive to maintaining or developing self-efficacy. This is relevant to research which suggested that there are no adequate and well-established means of preparing teachers working in special schools to cope with these requirements; and these professionals, by relying on their current efficacy levels, experience difficulties in adapting to the expectations in the field (Klein *et al.*, 2001; Singh 2009).

The findings related to the impact of experience in teaching self-efficacy should be discussed with reference to the particular and demanding nature of teaching children with autism. It was mentioned a number of times by the participants that children do

not always learn or progress in a linear way. According to Bandura, mastery experiences are the most important source of efficacy information. Performing a task successfully strengthens people's sense of self-efficacy. On the other hand, failing to adequately complete a task or challenge can have a negative impact on and weaken self-efficacy. On these occasions, prior accomplishments with children with autism, either the same or different cohorts, do not guarantee future successes in teaching. Hence, mastery is one aspect of experience that can have an impact but some of the participants said that with the years of experience they learned to persevere. Some of the participants in Boomgard's (2013) study, who were teachers of pupils with autism, reported that their self-efficacy did change, and this change in perception might have been partly due to teachers' confidence in their successful implementation of interventions.

Participants' responses with regards to experience and its impact on their self-efficacy revealed a positive association. However, they found managing staff overall generally challenging task. This finding is in line with the assertion made by Fast, Burris and Bartel (2014) that all managers face remarkable pressure to demonstrate personal efficacy—that is, to possess the skills and abilities necessary to be effective and influential in the context of their managerial roles.

Some participants discussed that experience had a positive impact on the way they received negative feedback. This is further explored below. However, it was common that experience builds confidence and assertiveness and these may result in improving self-efficacy. It was evident from the discussions that participants felt increasingly more confident about their abilities and that the knowledge and skills that they had accumulated over the years helped them deal better with the challenges of teaching children with autism.

Participants also felt that their efficacy fluctuated mainly due to the changing needs of the children. The findings are in agreement with Bandura's (1986) assertion that efficacy beliefs do not only differ in terms of domains and contexts; they are working and living 'organisms' which are continually shaped as people change

ideas, emotional states and circumstances. For teachers of pupils with autism in particular one may add the additional changes associated with student behaviours. Change was mentioned a number of times by the participants in terms of children's profiles, timetables and circumstances at school which not surprisingly has also led into fluctuations in efficacy. Another reason is the emotional states which, as discussed earlier, participants felt had an impact on their efficacy. Change in those would be likely to lead to change on the teachers' perceptions of their levels of efficacy.

Theme 3. Support and collaboration

Participants spoke enthusiastically about the positive influence which support they received from leaders had on their self-efficacy and also spoke rather highly of them. Participants in all five schools described a very positive climate of collaboration. They referred to collaboration at various points in their interviews and also expressed their views on collective efficacy in their schools. It is interesting to note that the word 'team' was used 152 times in the interviews, which equates to an average of 6 mentions in each interview.

This is a special school you have to be aware of it's not just about your classroom is so much more than that it is the sort of school that we help each other constantly and we think outside of your classroom sometimes to find solutions. (P-FOURTEEN-Senior Teacher)

I just think each person has bits of pieces which work and bit of pieces which don't work and it's a matter of sharing bits of pieces. (P-TWENTYSIX-Teacher)

It came across strongly that participants relied on and valued team work. They expressed their views regarding collaboration in terms of teaching, overcoming challenges, complementing each other and contributing to a collective skillset to meet the needs of the children.

We think together whatever the different options are, teachers have a lot of options to choose from so they are actually better off and they have helped to come up with these things and therefore is more beneficial for the children....I think also here there is a lot of great staff, you 've got at least two support staff

in your class and usually one of them or maybe both have been in the school a while and have worked with different teachers so they know the children better and you collectively we can help them learn. (P-SEVEN - Assistant Head)

A lot of staff would think they are very good across all areas but they may not necessarily realise that their abilities can vary...I think it depends on how self-reflective they are some staff would say I am really good at that and I need help with something else but other staff their confidence is such but they think they can do everything.... it really depends on the individual and I think when we are not as good a school is when, when we treat everybody the same... because I think there are very much individuals and abilities vary a lot. (P-FIFTEEN – Head of School)

I think sometimes significant achievement because regardless or it may look like regardless of you are teaching and there are those events taking place you can never plan for but I think, that any learning that take place would be down to the culture of the way we work, the culture of the group that I'm in an ongoing way training and I am really through the strategies that we are collectively carrying out. (P-BRS- TWENTYONE - Senior Teacher)

The comments on support in this section came from fourteen participants who are teachers with no middle or senior management responsibilities. Most of them felt that support by leaders with teaching, behaviour management, emotional support in difficult circumstances, availability and approachability made a difference in their self-efficacy.

If you have got a particularly difficult child there are a lot of people you can go and talk to, and makes you feel you can help that child, whereas before you felt you couldn't. (P-FIVE- Tteacher)

Three participants felt strongly about being in charge of their teaching.

I am quite a free spirit and I like to be left to my own devices and lucky I am at a school that have faith in my teaching and let me teach in a way that I think is best for my children (P-EIGHTEEN-Teacher)

The majority of the participants also made references to training opportunities provided or organised by leaders which they also seemed to value highly. Most of them felt that it had a positive impact on their practice. They discussed training more

in relation to gaining new knowledge and the impact on efficacy seemed to be less obvious

I've been sent to some fantastic training courses. Really inspirational in house training really helped me feel so much more capable. (P-TWENTYFOUR-Senior Teacher)

There were, however, a few comments made regarding training which participants felt was not always relevant or that the value and the impact of the training would depend on who was delivering it. Interestingly the participant who made the comment above works in the same school with the male teacher who did not find leaders having any effect on his self-efficacy.

Yeah training is not designed to meet needs of individual people very much mostly it's just like everyone gets the same thing kind of thing so when you have training ...it's not really designed to meet needs for individuals. It doesn't make any difference to how I feel about my teaching. (P-OK-TWENTYSIX-Teacher)

Structure was also mentioned as having an impact on teachers' self-efficacy as well as the importance of respecting the leaders, as discussed earlier in this chapter when elaborating on appropriate role models.

I worked in other places where I didn't respect the leader and I did not have the same respect to them...I reach deadlines, I was thinking what's the point.... If I didn't respect what he was saying, I did not have the same, not rebel but I got like what's the point whereas when my current head speaks he is so inspirational you feel like 'I wanna do this'. (P-ELEVEN-Deputy Head)

Leaders were keen to support teachers through coaching and as a couple of them put it to 'help them find the answers'.

You need to create that kind of energy and positive thinking amongst teachers cause in theory you want to create leaders that become leaders in their classroom so it's just to boost them a little bit and motivate them and to sit with them when they have a low time or a low day or lesson that didn't work so well... so it's about recognizing your mistakes and the fact that you are not

*so outstanding all the time but ten using it as a building block to move forward.
(P-SIXTEEN - Senior Teacher)*

Senior leaders spoke about their views on how they can support staff develop their self-efficacy. Below is a summary of how teachers and senior staff responded to the question regarding leaders enhancing efficacy in an attempt to compare teachers' responses about support with senior leaders' responses about the type of support which impacts on teachers' efficacy (Table 19). This table has two columns with the views on support of senior and non-senior staff. The views shared by both groups appear underlined on the table. This table shows a considerable overlap between what teachers discussed with regards to the support that they are receiving from leaders and the type of support leaders feel contributes to enhancing teachers' efficacy.

Teachers	Senior Staff
<ul style="list-style-type: none"> ● Celebrating good things ● Sharing good practice ● Motivate ● <u>Praise</u> ● Giving ideas ● <u>Training</u> ● People to go to for help ● <u>Collaboration</u> ● <u>Communication</u> ● Being given freedom ● Support in class ● Structure ● <u>Being valued</u> ● <u>Coaching</u> ● Emotional support 	<ul style="list-style-type: none"> ● Resources ● <u>Ok to make mistakes</u> ● Feeling like a family ● Scrutiny ● High expectations ● Outward views ● Flexibility ● Learning by watching others ● Appropriate models <p>Impact on staff SE:</p> <ul style="list-style-type: none"> ● Responding to staff requests ● <u>Training</u> ● <u>Praise</u> ● Motivate ● Feedback ● <u>Coaching</u> ● <u>Communication</u> ● <u>Collaboration</u> ● <u>Ok to make mistakes</u> ● Being passionate – giving energy ● Empower ● Appropriate models ● <u>Value</u>

Table 19 - Participants' responses on support

Summary of findings

1. The majority of teachers felt the support from leaders had a positive impact on their self-efficacy.
2. Leaders' responses on the type of support that impacts on teachers' self-efficacy were similar to what teachers felt they needed.

3. Collaboration and team work is important in meeting the needs of children with autism and mediated the effects of stress.
4. Feelings of collective efficacy were strong, especially in overcoming teaching challenges.
5. Training can positively influence self-efficacy.

Discussion –Support and collaboration

The responses provide strong evidence of collaboration in all five schools. Participants clearly believe that teaching children with autism relies on teamwork and the capabilities of the team. Da Costa and Riordan (1996) examined the relationship between teachers' sense of efficacy and teachers' willingness to engage in collaborative relationships with colleagues and found a positive relationship. Although these results are limited by the study's small scale, they point to the need for further examination of the two concepts; the present study is able to contribute to this knowledge.

Participants spoke about the importance of collaboration in relation to the difficulties they face with the students. It was evident that support for the team and colleagues made a difference and contributed to dealing with the demands of teaching children with autism. They also mentioned discussions with leaders and team members which they noted had an effect on their efficacy. Brown (2003) also showed that verbal self-guidance, strategies aimed to enhance team efficacy, had an effect on performance, both directly and indirectly through collective efficacy. Tasa *et al.* (2007) also asserted that collective efficacy is influenced by making comparisons and receiving feedback from team or group members engaged in the same behaviour.

In terms of stress, the findings, which are also discussed under 'emotional states', suggest that collaboration mediated the effects on stress to a degree and emotional support was important in alleviating some of the pressures teachers face. A similar assumption was also made by Goddard (2001) who said that when teachers as a group in school believe that the staff as a whole can be successful, they will be more

likely to persist in their own personal efforts to achieve such success. Klassen and Chiu (2010) asserted that collective efficacy also serves as a job resource that mediates the effect on stress from student behaviour on job satisfaction. The findings on collective efficacy and job satisfaction are not conclusive however they add to the limited existing literature on collective efficacy and teachers with autism. The findings also suggest that in outstanding schools leaders are supportive and promote collective efficacy.

The quantitative results indicated that collective efficacy and self-efficacy were higher in senior staff. Kev and Koslowsky (2008) also found that managerial staff members showed higher levels of self-efficacy. The participants' collective efficacy was not measured; however the responses show no obvious difference in the strength of the collective efficacy beliefs between senior and non-senior staff.. It is worth clarifying that when teachers were elaborating on collective efficacy their responses seem to cover more the capabilities of their classroom teams as opposed to the whole school whereas the senior leaders seemed to refer more to the whole school's collective efficacy. Comparisons therefore, could not be accurately made however; it is evident that the beliefs in the capabilities of a group, either larger or smaller were evident in all five schools.

The majority of teachers felt support from leaders had a positive impact on their self-efficacy. They discussed support in terms of developing their skills through training and support with the difficulties in class. It must be noted though, that the impact of support on teachers' self-efficacy, as they discussed it, seemed to be weaker compared to experience and verbal persuasion. This was apparent from the number of comments made and also by the way the participants spoke about experience and the enthusiasm or tone in their voice. Senior leaders' responses to the type of support that has impact on teachers' self- efficacy were broadly similar to what non-senior staff felt they needed. Senior leaders elaborated on the importance of valuing difference in personalities and working on teachers' strengths as well as providing coaching and mentoring. The latter was consistent with the responses of a few

teachers who felt that it had more impact on their efficacy when the leaders helped them to develop their skills as opposed to telling them what to do. In terms of the impact of support from leaders on special needs teachers' efficacy the evidence seems to be lacking. Goddard and Skrla (2006) also found that encouragement from teacher colleagues, principals, and district leaders may be insufficient alone, but that coupled with the requisite training and experience, it has the potential to strengthen teachers' self- and collective-efficacy. The findings of this research add to the existing literature and suggest that support from leaders in terms of training and coaching has a positive impact on teachers' self-efficacy. The number of participants however was relatively small and this area would benefit from further exploration. A thorough study of the impact of different types of support with additional quantitative measures of teachers' efficacy would provide very useful knowledge to teachers and leaders of special schools and children with autism.

In terms of training, participants found that it was useful and had some influence on their self-efficacy. Strong (2014) also found positive links between training and self-efficacy. Jennett *et al.* (2003) found that for teachers of pupils with autism training in an autism-specific intervention facilitates pedagogical self-efficacy. They referred to training on specific interventions such as ABA and TEACCH. The participants in the present research spoke about different types of training, which they felt was helpful in developing their skills. Also, the participants of this research, contrary to the ones in Jennett *et al.*'s project, did not implement a particular teaching intervention/method in their school. Hence, the findings contribute to the existing knowledge of the impact of training on self-efficacy by concluding that any relevant training for teachers seemed to be positively associated with their self-efficacy. Training has a positive impact not only in gaining new knowledge but in reflecting on existing knowledge, refreshing and also validating teachers' current views and approaches.

Theme 4. Vicarious

This section analyses and discusses participants' responses and thoughts on observing and learning from others. Participants spoke about how other teachers' practice has an impact on their own practice as well as their self-efficacy. All participants, regardless of age or years of experience found vicarious experiences helpful. While discussing this matter, participants were also asked how other teachers' efficacy affects theirs and whether they are affected by others who they believe to be more efficacious than them. The opinions in this section were not as uniform but there was a general positive feeling about working with more efficacious colleagues. This section is divided into two subsections; learning from others and the impact of other teachers' self-efficacy.

Learning from others

Participants explained that through observing others informally or by arranged peer observations they were able to get ideas or improve their practice in areas where they felt less efficacious. One very experienced senior teacher said:

I definitely had low self-efficacy when I started here because is definitely something that I had not really experienced before and that has been a case of just observing very, very very good practitioners and watching a lot so I'd say behaviour has been one of areas I've learned a lot by watching others to get better at and now I am confident I can manage a situation. (P-EIGHTEEN)

Three participants also mentioned that looking at others' practice encouraged them to be more reflective of their own teaching. A few participants pointed out that they adapted their practice influenced by what they saw around them and tailored it to fit the needs of their students as well as their own style of teaching and personality.

You can use that to propel yourself that's a good thing it will be a motive, motivating yourself, 'oh wow this is a great idea' or 'this is the way they do their planning, maybe I can try and still have a little bit of me in it'. (P-SIXTEEN)

Participants who were relatively new to teaching (with less than four years of experience) found that observing good practice had a positive impact on their self-

efficacy. They mentioned vicarious experiences as playing a key role in developing their self-efficacy at this stage. The same idea was shared by more experienced colleagues while they were reflecting on how their self-efficacy had developed over the years. Some of the more experienced participants, (those with more than six years of experience), talked about how their previous vicarious experiences have enabled them to build their confidence and self-efficacy.

That was really, really difficult to me as I had no prior knowledge of children with autism, I worked one-to-one with the children lots of times I had no idea why they would display certain behaviours... just looking and copy what people knew how do really helped me build up my own confidence and start to believe I could do it too...(P-THIRTEEN).

Four participants talked about being selective of the practice that they would wish to emulate depending on how highly they valued the quality of teaching they observed and essentially whether they considered those colleagues to be appropriate role models for them.

I like to watch what people do...but I only think it affects my practice if the outcomes they are producing are greater than I can produce myself. ... (P-EIGHTEEN)

Impact of others' self-efficacy

The majority of the participants felt that working with people with high self-efficacy had a positive impact on their own self-efficacy in the sense that they saw good practice they could learn from, they can pick up ideas and they saw this also as an element of motivation. Most of the participants acknowledged that staff have different strengths and weaknesses and children can benefit from different input. The responses of the participants did not seem to vary based either on their age or level of experience.

I do like to work with people with high self-efficacy. With Cynthia at the moment in Apple class cause it just really pushes me forward to learn more for myself to try new things and its not just you out there trying, to be more assertive with management and things as well that we may not necessarily

agree with something or you 've got an idea you want to take forward to have someone else to do that with I think has a bigger impact and when you both work as hard as each other then you get the double amount of impact going into that class. (P-SEVENTEEN)

A few participants mentioned that their colleagues' self-efficacy had an impact on their teams. With regards to working with colleagues whose efficacy is considered to be low or lower most of the participants' response was that they feel the need to support them in the interests of better running of the classroom and the school.

I think, it affects the teams because we work so closely as within the class. If I had a teaching assistant with low self-efficacy I would have them working with what activities they can pursue, is an area of particular interest they have maybe with art or something so maybe they can go and do the art activities with the children or in team meetings I will ask their opinions about crafts activities for example 'oh next week we are making a snowman, what do you think we should use' to build their confidence. (P-ONE)

Three participants mentioned that working with others with higher self-efficacy used to harm their morale when they were new to the profession but with experience they saw the benefits of working with highly efficacious colleagues.

A couple of years ago if I was working alongside one of the assistant heads with lots of experience and very high self-efficacy...they were coming to teach my class I would think 'oh, they will come in and do things, I should have probably thought of' and that doesI think that's different...if somebody comes in now and thinks 'Oh, I know what I am doing' and addresses a situation differently to me I wouldn't necessarily feel that this has an impact on whether I did it the right way or not, they do it a different way....we don't know what the outcome would be (P-SIX)

Summary of findings

1. Vicarious learning has a positive effect on teachers' self-efficacy especially at the early stages of their teaching career.
2. Participants did not feel that their morale was damaged by watching others being more efficacious than them. On the contrary, they highlighted the fact that working with efficacious colleagues led to the more effective running of the class.

3. Vicarious experiences have more impact when provided by appropriate and highly efficacious role models.

Discussion –Vicarious

Participants talked about how vicarious experiences affect their self-efficacy and their teaching as well as how others' self-efficacy impacts on their own. They found that learning from others is beneficial for them especially at the early stages of their teaching career. They mentioned that observing good practice not only gave them ideas they could use, with greater or lesser adaptation, with their children but also seeing others being able to manage situations, especially behaviour, made them think that they would be able to also do it themselves which essentially denotes a positive impact on their self-efficacy.

Responses were overall positive; participants did not feel that their morale was damaged by watching others being more efficacious than them. On the contrary, they highlighted the fact that working with efficacious colleagues enabled classrooms to be run more effectively. Also, more senior participants expressed their willingness to provide support to staff whose efficacy was considered to be low.

The advanced capacity for vicarious learning is another distinctive human quality that receives considerable emphasis in social cognitive theory (Bandura, 1989). Witnessing others successfully completing a task is another important source of self-efficacy. The findings are in agreement with Bandura's theory for the most part. What has to be considered, as discussed earlier in the section exploring the impact of experience, is that teaching children with autism is different from mainstream teaching. Children with autism learn very differently compared to normally developing peers and more importantly children with autism may not always respond in the same way to all adults, which was something that was mentioned by the participants on a few occasions. Boomgard (2013) found that other teachers' successes as well as challenges when implementing the interventions and strategies specifically targeted to the unique learning needs of student with autism provided

participants with experiences that appeared to enhance a perception of self-efficacy. Therefore, while exploring the impact of vicarious learning in teachers' self-efficacy in the context of autism, parameters related to the needs of the children should be taken into account. Essentially, watching others teaching a child with autism successfully could potentially have an impact on a teachers' self-efficacy but at the same time that does not mean that the child will respond in the same way to a different adult or that the same delivery would work for a different child with autism.

While discussing modelling, Bandura (1986) also elaborated on the importance of appropriate models. Teachers are more likely to adopt or consider observed practices when the models have competency, prestige and power, stereotypical 'gender appropriate behaviour' and the practice is relevant to the observer's situation. The findings of this section appear to agree more with the first and the fourth suggestion of the characteristics of appropriate models. Some of the participants indeed mentioned that they valued vicarious experiences when the models are able to produce outcomes and they also have high efficacy and where the context is relevant. References to gender were not made.

The literature has covered the impact of vicarious experiences and the importance of appropriate role models. This was more relevant to observing good practice. Where evidence is limited is the impact of others' self-efficacy on teachers' own. The findings of this project contribute to the literature by providing some evidence which suggest that working with more efficacious teachers propels efficacy and helps classrooms run more efficiently. A larger sample would yield more solid results in this particular area.

Theme 5. Verbal persuasion

This section explores participants' views with regard to the influence of verbal persuasion on their self-efficacy. More specifically, this section analyses what teachers reported in terms of whether and how other teachers' comments and feedback, either positive or negative, influence their self-efficacy.

More than half of the participants mentioned that verbal persuasion and feedback impacted on their self-efficacy. This was more evident with the participants with less than seven years of experience in the field. The senior leaders also commented on the importance of verbal persuasion in developing teachers' self-efficacy.

In terms of support, the majority of the participants valued the support they receive highly in terms of the impact this has on their self-efficacy as well as the in terms of dealing and overcoming the challenges of teaching children with autism.

Nearly half of the participants discussed verbal persuasion. They talked about how receiving positive or negative comments affects their self-efficacy. Not all participants who discussed this seemed to be affected.

Four participants talked about praise and positive comments and mentioned that this has a positive impact on their self-efficacy. Those participants had less than seven years of experience. Three of the senior leaders also felt that positive comments and praise impact positively on teachers' self-efficacy.

I had a child for three years with extremely challenging behaviour and he nearly broke me... I thought my behaviour management wasn't good then because of all the experts who couldn't help me and she (a psychologist) was the first person who praised me that was very powerful for a teacher she made me realise that I was very good at behaviour management and believe in myself and my self -efficacy, that was the most powerful thing just actually praising and going like 'oh look you do this' you know. (P-NINETEEN)

Five participants mentioned that negative comments affected them. They talked about receiving unfavourable comments from other colleagues, senior leaders or parents. Those participants again had less than seven years of experience in the field.

I think certainly celebrating good things and sharing good practice, which is what is happening here but sometimes like in any school you feel that you are not capable because of a small thing that one person has said and that can really change things and that is a real shame because you kind of need that

whole 'that's really good' and you kind of need those things it has to be done in a constructive way. (P-THREE)

All but five participants stated that observations and feedback have an impact on their self-efficacy and confidence. Most of them stated that getting 'outstanding' feedback made them feel good about their teaching. The teachers appreciated the constructive feedback and saw it as an opportunity to learn and work on specific targets. This was the case mostly with less experienced teachers. On a number of occasions, they stated that they felt motivated, enthused and constructive feedback drove determination and perseverance.

If the observation goes well then your self-efficacy rises and you feel more able to do your work but if you have put all that effort in and the feedback that you get isn't as good as you want it to be it would affect your self-efficacy and you would think well I have tried my hardest and it is not as good as I thought it was or I am not good as I thought I was. (P-ONE)

Four of the participants felt that their self-efficacy would be affected by an observation or feedback if they respected professionally the person carrying out the observation or giving feedback

Unless the other person was the most expert in the world and you had huge respect for them then maybe or if you were doing something totally wrong then maybe, if they told you that everything you were doing was totally wrong then your notion of efficacy may change ... (P-NINETEEN)

Senior staff as well as teachers saw observations as an opportunity to reflect on their own practice and get new ideas.

Constructive criticism which came from the observation was much more useful in me challenging my own teaching compared to getting outstanding feedback which made me think and I came out of this discussion feeling really motivated, efficacious I guess, and quite enthused to make changes and wanting to be a better teacher whereas if you get told every time you are outstanding you get a bit complacent I think. (P-EIGHTEEN)

Two participants, one senior teacher and one teacher working in the same school, stressed that for them the feedback that matters more is one coming from the students which makes them reflect on their practice and their self-efficacy and

motivates them. At different points in their interviews they also mentioned that their belief in their capabilities is based on how their teaching impacts on the students.

The feedback you get is from the students. You can get Ofsted or Challenge Partners come in or whoever you like and give you feedback, I take it all on board and its great but for me the vital feedback it's from the students and that's instant right there in your face. The feedback that you get is from the students seeing that happening and that working and that moment 'oh that's really good, I am gonna use that, you know. Then you feel so capable. (P-BRS-TWENTYSIX)

Participants also commented on how the observations and feedback affect them emotionally which will be further discussed in a later section about emotional states. Three senior leaders felt that they were under pressure to deliver accurate feedback. Five of the teachers commented on the negative impact of feedback on their emotional states by saying that they felt 'deflated', 'stressed', 'upset', 'pressurised' and also that how they were going to receive feedback and whether this was going to affect them. Three of the participants stated that this also depended on their mood on that day.

It depends what mood you are in...if you have a bad day and you get bad feedback then isn't going to have the best impact on your self-efficacy, is it? (P-NINE)

Participants who mentioned that negative feedback affects their self-efficacy and their confidence in their teaching were also asked what they do to improve their efficacy in that instance. All of the participants showed determination, perseverance, willingness to work on their targets and recommendations and said that they aimed at getting more positive feedback the next time they were going to be observed. Resilience was also mentioned in the previous section.

I will just work on it and the next time I get the feedback is better...do you know what I mean...is being able to improve yourself. (P-NINE)

There were two teachers whose answers were markedly different to the others. One was an outreach teacher who does not have much teaching commitment and whose answers were based on her experience working in a different special school rather than her current school. The other was a male teacher with many years of experience.

The outreach teacher said:

They never praise, they never observe lessons or never....this is all my experience again. They never sort of...they don't show an interest I guess especially in special school in all about behaviour managementdon't think management really acknowledge it so I think that actually can sort of deter creativity in a way in special school (P-NINETEEN)

The male teacher in response to the questions said:

Nothing. I've worked in a lot of schools ... schools don't tend generally help people's self-belief, they just teach children and nowadays, you get inspected or you know, observed. It doesn't help your self-belief, it doesn't improve your efficacy or doesn't change your belief. I suppose if you have a negative observation it would tell you that someone believes you can't do something. If you get a positive observation, then you think well that person thinks I can do whatever is they observing, but that may not be actually the truth. (P-TWENTYSIX)

Summary of findings

1. Teachers with less than seven years of experience felt that comments others made, negative or positive, had a corresponding impact on their self-efficacy. Positive comments and constructive feedback made them feel more willing to try harder.
2. Feedback was believed to be more appreciated when given by people whom the teachers respected professionally.

Discussion - Verbal Persuasion

With regard to the impact of verbal/social persuasion on self-efficacy, some participants with less than seven years of experience felt that comments others made, negative or positive had an impact on their self-efficacy.

According to Bandura (1995) social persuasion serves as an effective way to increase beliefs in one's capabilities, and more specifically, increase the likelihood of exerting greater effort and sustaining it. Bandura also asserted that people could in fact be persuaded to believe that they have the skills and capabilities to succeed. Participants' comments revealed that positive comments and negative feedback made them feel determined to try harder.

Coladarci and Breton (1997) found that the perceived usefulness of supervisory visits rather than the number of visits each year had greater predictive value for teacher efficacy. The quantitative results of this study did not indicate statistically significant relationships between observations, self-efficacy and collective efficacy. during interviews participants did not comment on the number of visits but, consistent with Colardaci and Berton's results, most participants and especially those with less than seven years of experience found that observations had an impact on their self-efficacy. Some leaders also felt that their visits to the classrooms were beneficial for the teachers' self-efficacy.

Bandura (1997a) also suggested that to raise efficacy by persuasion expectations of personal competence without arranging conditions to facilitate effective performance will most likely lead to failures that discredit the persuaders and further undermine the recipients' perceived self-efficacy. The findings are consistent with Bandura's position. Participants spoke about constructive feedback and receiving helpful advice but also placed considerable emphasis on receiving appropriate advice and support from the leaders to further develop their self-efficacy.

Bandura (1997a) argued that social persuasion as a source of efficacy information is the least effective strategy in the long term (although it might be effective in the short term). He also argued that its impact may depend on the quality of the persuader. Even though participants, provided some evidence of the lasting effects of comments they had received, it was not evident whether social persuasion had a lasting effect on their self-efficacy. Having said that, we also need to consider the

relative nature of ‘lasting’. Feedback from observations had more impact on self-efficacy than less formal comments. Feedback was also believed to be more appreciated when provided by those whom the teachers respected professionally. Social persuasion, though limited in its impact, may provide an ‘efficacy boost’ to counter occasional setbacks that might otherwise have instilled enough self-doubt to interrupt persistence (Woolfolk and Burke, 2005). The findings are consistent with this assertion as the participants mentioned on a number of occasions that positive comments boosted their confidence, mood and also self-efficacy especially on occasions where they had to deal with particularly challenging circumstances in the classroom.

Theme 6. Emotional states

This section analyses and discusses participants’ responses with regard to the impact of emotional states on their self-efficacy as well as the feelings that the challenges of their profession evoke. Participants spoke about how working with children with autism makes them feel, which was also discussed in a previous theme. They reported having feelings of self-doubt, losing their confidence as well as feeling deskilled. They mentioned the impact of workload and reported feeling pressurised and stressed. These feelings led some of the participants to taking leave from work. Some participants also talked about how feelings generated from their personal life impact on their efficacy. This aspect also included physiological states such as feeling tired or being ill.

This section is divided into three subsections; feelings at work, feelings outside work and a separate subsection on stress and burnout.

Feelings at work

Five participants discussed feelings of self-doubt and two felt that the nature of the needs of the children and the fact that they do not always make progress made them feel ‘deskilled’. Participants who elaborated on those feelings were either teachers or senior leaders with a range of years of experience. One of the participants who is an

assistant head talked about how feeling 'deskilled' had an impact on her self-efficacy in her teaching efficacy as well as in her confidence to provide support for other stuff.

The children don't respond to you, you feel deskilled and you feel you don't know the best way to do it and that's hard.... You are supposed to be setting an example to the staff as well so you go in supposedly knowing what you are doing. (P-SEVEN)

Nearly half of the participants reported feeling pressurised. They attributed those feelings to workload, the high standards set by an outstanding school, the responsibility for the progress of their students and the impact of observations. They stated that those feelings generally had a negative impact on their self-efficacy which they mainly described as having doubts about their capabilities.

Yeah, definitely (stress affects my self-efficacy) the work load it huge...and you see your class suffering because you have so much paperwork to do and that's really stressful and that's a massive balance. You do your classroom job and then you do your office job and you have all the resources to do and all the people to manage you know its like five job and there are sometime that really strings you up...and makes you wonder whether you are doing it right. (P-SEVENTEEN)

It is noteworthy to say that all the participants mentioned feeling stressed about certain aspects of their roles. Sixteen participants felt that their stress was affecting their self-efficacy. The vast majority of the participants who have experienced stress related this feeling with not being able to manage challenging and physical behaviour and finding it difficult to cope with. A teacher in a secondary school stated:

It is so stressful.....You know you get to a point sometimes where you work so hard and it is...you have a group of very challenging children and you work so hard to kind of ...to continue to educate them the best way you can and every day you are coming in and you get hurt and every day you are trying something new and it doesn't work you kind of get to a point when you think, I am really rubbish at this I can't do this anymore you know it's more times like

that than any other time when your efficacy is really, really low (P-TWENTYFIVE)

Four participants reported that they had decided to take leave from work and a few others that they had considered doing so but were not able to for financial reasons. They said that due to the demands of their job, they felt incredibly stressed and doubted their capabilities as teachers.

I did decide to take time off and it was actually it was an self-efficacy reason and feeling stressed...yeah last year I had a child in my class with very challenging behaviour...I would have the odd meeting with people here and there and I was left to get on with it which is what I love but I didn't know how to get on with it because it was completely out of my remit of knowledge and there was spit and vomit everywhere and I actually got to a point do I actually want to do this every day because I was not getting anywhere it was Christmas the end of the term nothing had changed and my self-efficacy really dropped because all the things that should have worked were not working and I couldn't understand why ...(P-EIGHTEEN)

Feelings outside work

Participants talked about how emotions generated outside school affected their self-efficacy. They mentioned factors such as personal life, having doubts, financial commitments as well as parents. Nearly half of the participants said that negative feelings associated with personal and family matters as well as feeling unwell impacted on their self-efficacy.

Obviously illness... sometimes your personal life can come into it...I quite often have insomnia that comes and goes which sometimes it stays then I may find it hard to keep my energy levels up during the day.... And it can all get too much and I think sometimes 'oh, I really can't do this'. (P-THREE)

Some participants also spoke about the positive impact certain feelings can have on their self-efficacy. Three of the participants talked about feeling 'enthused' and 'excited' while doing a postgraduate degree in special education.

The lecturer we had was controversial and challenging and made you think. Is my practice really best what I wanted to be? I came out of this lecture feeling

that is massively important for me and I am feeling enthused, my self-efficacy is then high and I am sharing it with the team and they are all enthused. (P-EIGHTEEN)

Summary of findings

1. The challenges of teaching children with autism created stress and impacted on most teachers' self-efficacy.
2. Personal events had some impact on teachers' self-efficacy.
3. A few teachers had felt very stressed and overworked in the past, which resulted in taking leave and only occasionally attributed this to their self-efficacy also being low.

Discussion– Emotional states

Participants stated that the challenges of teaching children with autism as well as the busy nature of their job made them feel overworked and created feelings of self-doubt and reduced confidence in their abilities. All participants mentioned some degree of negative feelings which were generated as result of their job or their personal lives. Not all of them however saw those as having an impact on their self-efficacy. A few of them implied that this is part of what they do which would not necessarily have an impact on their self-efficacy.

Participants spoke about stress and nearly all of them identified a stressful aspect to their role. A few of them had felt very stressed and overworked in the past, which resulted in taking leave. A couple of them attributed this to their self-efficacy also being low.

According to the literature on emotional states, an individual's responses and emotional reactions to situations have an impact on their self-efficacy. Psychological, physiological and emotional states, personal circumstances and stress levels can all impact on how a person feels about their personal abilities. A person who becomes extremely nervous before beginning a task, a teacher before entering the classroom for instance, may develop a weak sense of self-efficacy in these

situations. However, Bandura (1994) also comments that it is not the sheer intensity of emotional and physical reactions that is important but rather how they are perceived and interpreted. The findings are mostly congruent with Bandura's theory. Participants indeed spoke about the emotional impact of their job but not all of them considered that those feelings impacted on their self-efficacy.

When discussing negative feelings after receiving unfavourable feedback, some participants reported feelings of determination which is in line with Mohmadi *et al's.* (2011) report that people may view a state of arousal as an energising factor that can contribute to a successful performance, or they may view arousal as completely disabling. Woolfolk and Burke (2005) argued that the level of arousal, either of anxiety or excitement, adds to the feeling of mastery or incompetence, depending on how the arousal is interpreted. For example, feelings of tension can be interpreted as anxiety and fear that failure is imminent or as excitement—being 'psyched' in order to deliver a good lesson. The findings suggest that there were one or two cases where participants felt fearful about having a new class and at the same time were looking forward to the new challenges. However the sample is too small to make generalisations on this matter.

Klassen and Tze's (2014) study revealed a significant but small effect size between overall psychological characteristics and teaching effectiveness. Participants felt that negative feelings did result in their classrooms not being run as effectively because they found it more difficult to deal with children's behaviours. Again, it is difficult to generalise the findings although there is some congruence with the above argument.

According to Platsidou (2010), burnout usually, starts with a feeling of being emotionally overextended and drained by the intense contact with students, parents and colleagues (emotional exhaustion). It may then lead teachers to negative attitudes and cynical responses toward the students (depersonalisation) and a decline in their sense of competence. Finally, it results in negative evaluation of teachers'

performance and achievement in their job (reduced personal accomplishment). The findings support that teachers experienced emotional exhaustion, however there was no evidence of cynical responses towards the students.

Ruble *et al.* (2011) found that physiological and affective states, as examined by stress and burnout, would be associated with self-efficacy. Teachers who reported more confidence in their classroom management abilities reported lower levels of burnout. The findings did not show any strong links between confidence and stress levels. Ruble *et al.* (2013) also found a negative relationship between teacher self-efficacy and teacher burnout. Ruble's research was quantitative. This would not be safely assumed also because this is qualitative analysis and no statistically significant association can be made.

6.5.4 Teachers' efficacy in Outstanding schools

The previous sections explored themes related to self-efficacy and collective efficacy of teachers of pupils with autism who were interviewed. More specifically, they explored the effects of experience, vicarious learning, emotional states and support. This section provides a summary of all the findings related to teachers' self-efficacy. It also analyses participants' responses about how they think outstanding schools influence self-efficacy. This section also looks at responses in relation to the literature on the characteristics of highly efficacious teachers as discussed in Chapter 2.

At this point, each school will be explored in terms of the participants' self-efficacy and collective efficacy. A summary of the profile of each school is available in Appendix 6. These were all outstanding school as graded by Ofsted. The comments of the teachers in this schools that follow highlight the impact those schools, as being outstanding, have on their efficacy.

The five schools visited had all been graded as 'outstanding' by Ofsted. The schools for children with autism had larger staff teams working with children with autism compared to the schools with units for children with autism, where staff teams were

smaller. The qualitative phase of this study explored and tried to explore how outstanding schools influence teachers' self and collective efficacy.

Even though each of the schools visited had its own culture and way of working there were a few common factors:

- Experience offered in the school
- Support from senior leaders
- Training
- High expectations
- Clear expectations
- Vicarious experiences

Teachers and senior teachers who also had teaching responsibility spoke about training, support and collaboration. The majority felt strongly about leaders responding to their needs, valuing their contribution and providing constructive feedback and support.

Senior leaders talked about the impact of working in an outstanding school on their self-efficacy by pointing out the pressure, the difficulties for maintaining standards and the impact on their personal lives. The majority were positive. They highlighted the importance of having high expectations, valuing staff and providing appropriate coaching and mentoring to empower teachers.

Below is a list of the headline participants' responses:

- Difficulty maintaining momentum
- Collaboration
- Learning from their own mistakes
- Perseverance
- Pressure
- Structure
- Support
- Recognition
- Motivation
- Training
- Resources

- Valuing people/morale
- Coaching
- Clear/ high expectations
- Consistency

I gained a lot of CPD...I lost a lot of my personal life...because you work extremely hard in at our school. The expectations are through the roof...erm....it made be a better practitioner and stronger professional. (P-THIRTEEN)

I suppose having been an outstanding school people look up to you, people come to us for advice and to ask us to deliver training we kind of piloting in other schools in the borough and by being in that position makes us feel good and make us strive to be good makes us strive to be better. (P-OK-TWENTYFIVE)

If you don't have that leader at the front the force pushing the standards all the way through the school and having the consistent this is how is it whether you like or not this is where things start to fall apart. There is no consistency and expectation...it the leader with the vision. (P-SEVEN)

The latest resources, we got them all and that really enhanced myself efficacy because I had all the latest resources whatever we wanted...erm and that, from leadership, that really springs you on as a teacher to do better to be more creative because you think if they are willing to invest that much. (P-NINETEEN)

There was one participant, a senior teacher, who felt that there was nothing special about outstanding schools and he felt the culture was more important.

There is nothing special about outstanding school. But schools can have outstanding teachers. Doesn't necessarily mean that all the teaching is outstanding, all the culture of the school is outstanding school or the management team is outstanding. It does means that there is a feature of the world taking place.....these inspirational or special ... (P-BRS-TWENTYONE)

Earlier, in the literature chapter, I detailed the characteristics of teachers with a high sense of efficacy. The list is presented below along with comments on how participants in this study demonstrated those characteristics.

1. A Sense of Personal Accomplishment

Teachers with a high sense of efficacy feel that their work with students is important and meaningful; they feel that they have a positive impact on student learning. Teachers with a high sense of efficacy have a strong conviction that they can influence student learning, even the learning of those students who may be more challenging (Guskey & Passaro, 1994). The majority of participants were convinced that they contributed to students' progress. They acknowledged that children with autism have spiky profiles and their rate of progress can vary. However, participants believed that they are able to make a difference in their students' lives.

2. Positive Expectations for Student Behaviour and Achievement

Teachers with a high sense of efficacy expect students to progress and, for the most part, find that students fulfil their expectations (Ashton, 1984). Participants indeed had high expectations of their students. Again, students with autism are not similar to typically developing peers. However, the participants were positive about their students' progress as well as their behaviour. In most cases, the latter had led to challenges but teachers were able to persevere.

3. Personal Responsibility for Student Learning

Teachers with a high sense of efficacy believe that it is their responsibility to ensure that children learn, and when their students experience failure, they examine their own performance for ways they might have been more effective (Ashton, 1984). It emerged very strongly that teachers felt responsible for their students' learning. They shared this responsibility with their teams but they acknowledged that it was their role as a classroom leader to guide teaching and learning.

4. Strategies for Achieving Objectives

Teachers with a high sense of efficacy plan for student learning, set goals for themselves and their students, and identify strategies to achieve them (Ashton, 1984). Participants talked about creativity and explained that they put a lot of

thinking, effort and commitment to training and sharing ideas in order to find the strategies that were most effective with their children.

5. Positive Affect

Those who are well-versed in their subject matter and have a high sense of efficacy about their teaching capabilities, can motivate low achievers and enhance their cognitive development (Ashton and Webb, 1986). Participants were very positive about the children. Given the challenging nature of the children, teachers made efforts to engage and motivate them as a result of their commitment to teaching as well as their knowledge of autism.

6. Sense of Control

Teachers with a high sense of efficacy are confident that they are able to influence student learning. Teachers with high professional efficacy are more likely to set higher standards for students, make students accountable for behaviour, and persist until the students had met goals (Abernathy-Dyer *et al.*, 2013). Participants generally felt that being highly efficacious had a positive impact on teaching and progress. Participants felt that they were not always able to influence learning given that children with autism often present with spiky profiles and their progress can be affected by factors other than teaching. Participants spoke about how children's behaviour impacts on their efficacy. They did not always feel efficacious in managing behaviour. This was also related to the fact that the needs of children with autism change and also what works for one child may not work for another. Participants considered that with experience they became more efficacious in managing behaviour.

7, 8. Sense of Common Teacher- Student Goals and Democratic Decision-Making

Teachers with a high sense of efficacy feel that they are involved in a joint venture with students to achieve goals that they share in common (Ashton, 1984). They focus on student collaboration and interaction as opposed to drill and practice methods

(Woolfolk *et al.*, 1990). Teachers with a high sense of efficacy involve students in decision- making regarding goals and strategies for achieving goals (Ashton, 1984). Participants did not discuss these areas in their interviews. However, they did see building relationships with the children as an important element in learning.

6.6 Summary of findings

1. Outstanding schools had high expectations and a clear vision. Support and training had a positive impact on teachers' self-efficacy.
2. Teachers in the outstanding schools visited appeared to display characteristics of highly efficacious teachers: A Sense of Personal Accomplishment, Positive Expectations for Student Behaviour and Achievement, Personal Responsibility for Student Learning, Strategies for Achieving Objective, Positive Affect. They appeared to be positive but still realistic in terms of expectations given the nature of the needs of children with autism.

Discussion – Outstanding Schools

The majority of the participants mentioned support, collaboration, vicarious learning, and training as important factors in developing their self-efficacy. Participants also considered that high expectations and standards led to them feeling pressurised. The senior leaders mainly spoke about providing support and coaching to staff in order to enhance their efficacy.

The comments of teachers and leaders indicate a complementary relationship which was also discussed in a previous section. Ross *et al.*, 1996 suggested that supportive organisational cultures contribute to teaching by creating opportunities for teachers to (a) vicariously benefit from the successful experiences of peers, and (b) be persuaded of their own competence through feedback from supervisors (e.g., in clinical supervision models) and colleagues (e.g., in joint planning activities). Participants discussed at length how learning from others and feedback impact on their efficacy and encourage reflections. Etscheidt *et al.*, 2012 and Steffy and Wolf

in 2001 both supported that reflection is a factor in sustaining and improving teaching practice.

The analysis that outstanding schools had high expectations and a clear vision which was shared amongst staff. Outstanding schools offered support and training and allowed the participants to develop their practice and supported them through their challenges.

Team work proved to be a significant factor. Progress was attributed to the efforts of the team and the collective approach. This was highlighted both by senior and non-senior participants. Having a good team leader was also shown to be important.

The views of the teachers regarding outstanding schools and the potential difference with schools not graded as outstanding could not be fully explored as most of the teachers had only worked in outstanding schools and hence were not in a position to draw comparisons. However, the way that their outstanding schools affect their self-efficacy is analysed and discussed throughout this chapter. Below is a table of the key findings (Table 20).

	Key Findings
Child ren	<p>Lack of progress may have a negative impact on teachers' self-efficacy.</p> <p>Teaching children with autism relies on teamwork and the capabilities of the team. Progress is more closely related to collective efficacy than self-efficacy but teams need to be led by efficacious leaders.</p> <p>Efficacy rises when teaching has a positive impact on the children.</p> <p>Behaviour has a considerable impact on teachers' self-efficacy. When teachers feel more efficacious they feel that they are more capable of managing behaviour.</p> <p>Changing and challenging behaviour can cause teachers' self-efficacy to fluctuate.</p>
Exper ience	<p>Teachers with less than seven years experience felt that negative or positive comments made by others, had respective impact on their self-efficacy. Positive comments and constructive feedback made them feel more willing to try harder.</p> <p>Feedback from those who the teachers respected professionally was believed to be more appreciated</p>

Support & collaboration	<p>The majority of teachers felt that support from leaders has a positive impact on their efficacy.</p> <p>Leaders' responses about the type of support that has an impact on staff efficacy were broadly similar to what they staff felt they needed.</p> <p>Training has a positive impact not only in providing new knowledge but in enabling teachers to reflect on existing knowledge, refreshing and also validating teachers' current views and approaches. However, not all training was described as tailored to individual needs.</p> <p>Support from the team and colleagues made a difference and contributed to dealing with the demands of teaching children with autism.</p> <p>Collaboration mediated the effects of stress to a degree and emotional support was important in alleviating some of the pressures teachers face.</p>
Vicarious	<p>Vicarious learning has a positive effect on teachers' self-efficacy especially at the early stages of their teaching career.</p> <p>Participants did not feel that their morale was damaged while watching others being more efficacious than them. On the contrary, they highlighted the fact that working with efficacious colleagues helped them to manage the class more effectively</p> <p>Vicarious experiences have more impact when provided by appropriate and high efficacious role models.</p>
Emotional States	<p>The challenges of teaching children with autism created stress and impacted on most teachers' self-efficacy.</p> <p>Personal events had some impact on teachers' self-efficacy.</p> <p>A few teachers had felt very stressed and overworked in the past, which resulted into taking leave. They only occasionally attributed this to their self-efficacy also being low.</p>
Verbal persuasion	<p>Teachers with less than seven years of experience felt that comments others made, negative or positive had respective impact on their self-efficacy.</p> <p>Positive comments and constructive feedback made them feel more willing to try harder.</p> <p>Feedback from those who the teachers respected professionally. was believed to be more appreciated</p>
Outstanding schools	<p>Outstanding schools had high expectations and a clear vision Support and training had a positive impact on teachers' self-efficacy.</p> <p>Teachers in outstanding schools visited appeared to display characteristics of highly efficacious teachers: A Sense of Personal Accomplishment, Positive Expectations for Student Behaviour and Achievement, Personal Responsibility for Student Learning, Strategies for Achieving Objective, Positive Effect. They appeared to be positive but still realistic in terms of expectations given the nature of the needs of children with autism</p>

Table 20 - Key qualitative findings

Chapter 7 - Overall Discussion and Conclusion

7.1 Introduction – Summary of preceding chapters

This study explored self-efficacy and collective efficacy beliefs of teachers of pupils with autism in the UK. The nature of this study was exploratory. The main issues I wanted to explore were the parameters that shape teachers' self and collective efficacy and how those constructs affect teachers' practice. I wanted to explore teachers' views in depth and gain a deeper understanding on how they feel about their own capabilities in teaching children with autism and what shapes their self-efficacy. Self-efficacy was examined in more depth compared to collective efficacy. Bandura's social cognitive theory provided a model and provoked the desire for further exploration. The literature, my background and my own professional interests also influenced the particular issues that I chose to investigate.

Teachers of children with autism have a highly demanding role as children with autism present with complex needs and behaviours and require highly personalised teaching. There is a large body of research on teaching approaches for children with autism; however there is less documented research exploring the perceptions of the teachers themselves. I wanted to explore, in line with social cognitive theory and also the triadic reciprocal causation, how the environment (the school), the behaviour (teaching) and teachers' own characteristics affect their self-efficacy and consequently their teaching.

Identifying the factors that impact upon teachers' efficacy and their teaching can provide valuable evidence to inform schools' and teachers' practice. Identifying the ways in which teachers' efficacy can be enhanced can influence teachers' wellbeing and quality of teaching. For the same reason increased collective efficacy can lead to more effective teams and stronger collaboration and hence better quality of teaching.

The existing limited research on the self-efficacy of teachers of pupils with autism is based on a limited awareness of the impact of the constructs on teachers'

professional lives. This study also aimed at raising awareness and encouraging teachers to reflect on their practice and their efficacy and to look for ways to enhance them.

The epistemological perspective I adopted was a combination of interpretivism and pragmatism. The reasons for that choice were detailed in the Methodology chapter. Essentially, the role of the scientist in the interpretivist paradigm is to, 'understand, explain, and demystify social reality through the eyes of different participants' (Cohen *et al.*, 2007:19). Researchers in this paradigm seek to understand rather than explain. Pragmatism places the research question at the centre of the inquiry and looks at the 'what' and the 'how' to best explore the issues. Creswell *et al.* (2003) assert that the interpretivist researcher tends to rely upon the participants' views of the situation they study and recognises the impact of their own background and experiences on the research. Through questionnaires and interviews I explored the participants' views while trying to maintain a non-biased stance. Adopting a subjective position was not always easy, as I have worked in the field of autism for a number of years as a teacher as well as a senior leader.

The dissemination of the questionnaires was a lengthy process. The on-line questionnaires did not prove very popular and participants preferred the hard copy versions. The choice of the tools was very useful in gathering information. The Teaching Students with Disabilities Efficacy Scale (TSDES) adapted from Dawson, 2010) was at the time the only tool available for measuring the efficacy of teachers for children with disabilities which suited the purposes of this study unlike other questionnaires for mainstream teachers. The TSDES is a long questionnaire consisting of forty-five question and thus it may have discouraged a number of participants from completing it. However, the large number of questions provided more detail in line with the notion of self-efficacy being a task specific concept. The Collective Teachers' Beliefs' Questionnaire (CTB) by Tschannen-Moran and Barr (2004) was used to measure teachers' collective efficacy. Unlike the TSDES, CTB

was a short questionnaire and hence for this reason more appealing to complete. There was a very limited range of questionnaires measuring teachers' collective efficacy. The small size of the questionnaire, in contrast with the TSDES did not allow for greater details however it provided a useful evidence of the levels of collective efficacy.

A systematic approach to the analysis and identification of the themes enabled a more objective stance. In interpreting and discussing the results I related them to the literature and I drew from my own background and experiences as a teacher and senior leader. Also, during the interviews, due effort was made to ensure that the participants' answers were not affected by the stance of the researcher. Probing and affirmations were carefully delivered. It must be said that after the first couple of interviews adopting a neutral stance became easier.

7.2 Answers to the research questions

The study initially posed the following research questions that were answered through the first quantitative phase:

Quantitative - Phase 1 Research Questions & Answers

1. What are the self-efficacy beliefs of teachers of pupils with autism?

Self-efficacy and collective efficacy beliefs were generally high, >7.14. The highest mean score was observed for the 'Professionalism' and the lowest mean score was observed for the 'Related Duties'.

2. Do self-efficacy beliefs correlate with demographic factors and pupil achievement?

Significant differences were observed within the influence of participants' background characteristics on their self-efficacy. More specifically, significant differences were observed with regards to their position at school. Moderate positive correlation was observed between years of experience and self-efficacy.

In terms of quality of provision, significant differences were observed on Teaching Practices and Related duties. Outstanding schools yielded higher values than schools judged as satisfactory

In terms of training, results showed significant differences for Teacher Practices and Classroom Management. Those who had not received any training for specific interventions reported lower scores than those who received Mixed training. ABA group scored lower in comparison to TEACCH for Classroom Management.

In terms of years of experience, no notable differences were observed linked to the type of previous experiences. In general, moderate correlations were observed for all the self-efficacy subscales.

3. What are the collective efficacy beliefs of teachers of pupils with autism?

Collective efficacy beliefs were also generally high >7.65. The highest mean score was observed for 'Student Discipline'.

4. Do collective efficacy beliefs correlate with demographic factors and pupil achievement?

Significant differences in relation to position in school hierarchy were observed only on the two collective self-efficacy subscales; Teaching Strategies and Student Discipline. Heads of the schools and teachers in senior leadership position yielded higher values in comparison to teachers and middle leaders. Moderate positive correlation was observed between years of experience and collective efficacy.

No statistically significant variations were observed between collective efficacy subscales and quality of teaching, provision and leadership and management. However, the mean scores for these subscales were higher for schools graded outstanding schools than for those graded good and satisfactory

In terms of years of experience, no notable differences were observed based on the type of previous experience. In general, moderate correlations were observed for student discipline.

5. Is there a correlation between self -efficacy and collective efficacy levels of teachers of pupils with autism?

Correlations were significant and positive, ranging from moderate to strong. Higher values were observed between Teaching Strategies and Teaching Practices; lowest between Students' Discipline and Teaching Support.

Qualitative Phase - Phase 2 Research Questions & Answers

Phase 2 was the main phase of this study. The analysis of the survey results, in line with the sequential explanatory design, provided a focus for the qualitative phase. My experience, my professional interests and influence from the literature as well as current gaps in the self-efficacy research helped me to decide which of the Phase 1 results to explore further. Due to time limitations I was not able to explore all quantitative findings in depth. For the same reason self-efficacy was explored more than collective efficacy.

The qualitative results were analysed and discussed simultaneously in the previous chapter. In this chapter the main parts of the discussion will be presented. The following themes occurred from the thematic analysis in relation to teachers' self-efficacy and collective efficacy:

1. Children
2. Experience
3. Support and Collaboration
4. Vicarious
5. Verbal Persuasion
6. Emotional states

The six themes were explored through teachers' and senior leaders' views. The quantitative results suggested that senior staff's had higher self-efficacy and collective efficacy than non-senior staff. Through a survey and interviews, the study explored both groups' perceptions and drew comparisons where appropriate.

During twenty-four interviews, which lasted an average of half an hour each, participants answered a number of questions which sought to provide answers to the research questions of the study. The qualitative analysis chapter explored the themes arising from a thematic analysis where each theme was analysed and discussed. The participants were from outstanding schools where self-efficacy and collective efficacy were found to be high and therefore can be useful to staff in schools looking at understanding and enhancing self-efficacy and collective efficacy. Below are the answers to the research questions.

1. Do teachers think their self-efficacy impacts on their teaching and pupil achievement?

Participants considered how they felt that their self-efficacy impacts on the pupils' progress and conversely how the progress of pupils impacts on their self-efficacy.

More than half of the participants discussed the importance of knowing the children and building relationships with them. Participants felt that in order to feel efficacious and confident to teach certain children they had to feel that they were aware of the children's needs and triggers. In terms of progress, half of the participants responded that when the children are not making progress it has a negative impact on the teachers' self-efficacy. The children may plateau or regress at times and experience helps the teachers understand that this is due to the nature of the children's needs and not necessarily a reflection on the quality of their teaching and hence they argued that with years of experience they felt that those fluctuations in progress have had less effect on their self-efficacy. The findings suggested that self-efficacy rises when teaching has a positive impact on the children. Participants reported that progress is related more to collective efficacy than self-efficacy, highlighting that teams need to be led by efficacious leaders. The fact that teachers attributed progress to teamwork and related it to collective efficacy, while not surprising is a very positive outcome. Special needs classrooms have a relatively high staff: pupil ratio. Support staff as well as therapists are supporting children

intensively and this has an impact on their progress. In other words, learning and progress does not only come from the teacher, but from all adults in a classroom.

The quantitative results showed that self-efficacy and collective efficacy were higher in outstanding schools where achievement was also outstanding. The literature about the impact of efficacy on progress is mixed. However, it should be said that most of this kind of research has focused on mainstream teachers and not teachers of pupils with autism.

2. Do leaders impact on teachers' self-efficacy?

The majority of teachers felt that support from leaders had a positive impact on their self-efficacy. They discussed support in terms of developing their skills with training, receiving emotional support with the difficulties in their class as well as support in the form of modelling and feedback. A few participants mentioned that being given freedom and trust by leaders had a positive impact on their self-efficacy. A few others favoured having structure. Leaders' responses about the type of support that has impact on staff self-efficacy were not very different from what staff felt they needed, which is a sign of effective leadership in the sense that leaders are aware of staff needs and are proactive in developing their skills. Leaders elaborated on the importance of valuing difference in personalities and working on teachers' strengths as well as providing coaching and mentoring. With regard to the impact of verbal/social persuasion on self-efficacy, some participants with less than seven years of experience felt that comments others made, negative or positive affected their self-efficacy. Most teachers saw negative feedback as constructive feedback which motivated them to develop their practice. Feedback from those who the teachers respected professionally was believed to be more appreciated.

Leaders play a very important role in the running of the school. Different styles of leadership as discussed in the literature chapter have a major effect on teacher efficacy. Abdolhamid and Vali (2015) found significant and positive correlations between collaborative leadership style of the school's principal and teachers' self-

efficacy. It is logical to think that young teachers will need support more and this will have more impact on their efficacy while established teachers may feel more independent. It was also expected to a degree that teachers would appreciate support and feedback from professionals whom they regarded highly. This is in line with what Bandura (1997a) said about the quality of the persuader.

3. Do colleagues impact on teachers' self-efficacy?

Participants felt that vicarious learning had a positive influence on their self-efficacy, especially at the early stages of their teaching career. Participants with more than six years of experience talked about how their previous vicarious experiences have enabled them to build their confidence and self-efficacy. Participants mentioned that observing good practice gave them ideas that they could use, with some degree of adaptation, with their children and that seeing others being able to manage situations, especially behaviour, made them think that they would be able to do the same themselves which essentially denotes a positive impact on their self-efficacy. The fact that experienced leaders or teachers value the impact of vicarious experiences on their efficacy is an indication of open-mindedness and the willingness to evolve which is generally a characteristic of leaders of outstanding schools. Participants highlighted the fact that working with efficacious colleagues enabled them to manage the class more effectively.

The positive impact that others have on teachers' self-efficacy can be also explained by the positive feelings towards collaboration and collective efficacy. Staff enjoy working together and learning from each other and they feel they can achieve greater results through teamwork. This is also in line with the quantitative findings, which revealed high levels of self-efficacy for professionalism which looked at self-efficacy in working together, being supported by and consulting other colleagues. As it is teachers' efficacy did not seem to be affected in a negative way by others with higher efficacy but influenced positively through vicarious learning. This is also in line with the model triadic reciprocal causation of Bandura's social cognitive theory

according to which their environment, behaviour and emotional states affect the efficacy of others.

4. Do years of experience impact on teachers' self-efficacy?

The quantitative analysis revealed a moderate positive correlation between years of experience and self and collective efficacy. Experience was an area participants elaborated on at length during the interviews. Their responses suggested a significant perceived impact of experience on their self-efficacy. They spoke about the impact of experience on quality of teaching, behaviour management, mastery and staff management. The impact of experience on self-efficacy in those areas can be explained by the fact that children with autism present with very different and occasionally much more challenging needs including behaviour. Also there is a wide range of profiles within the autistic spectrum. This means that teachers continue to encounter children with needs that they have never worked with before, which may make them feel less efficacious. On the other hand, experience also includes past successes and mastery in dealing successfully with challenging children, which had a positive impact on the teachers' efficacy.

Nearly all the participants said that they felt generally more efficacious now than they did before and that they felt more resilient in terms of their self-efficacy in all areas. Prior experience in teaching pupils with autism had more impact on their self-efficacy compared to prior experience in mainstream education. However, some of the participants mentioned that having new children with different behaviours and needs at the beginning of an academic year made them feel less efficacious. There is research that supports both a positive (Pebbles and Mendaglio, 2004) and a non-significant relationship (Ghaith and Shaaban, 1999) between experience and efficacy.

Participants' responses with regards to experience and its impact on staff management efficacy revealed that the impact of experience was more on a psychological level and in terms of helping them regulate their emotional responses

and less so on developing their actual management skills. Participants said that with experience they felt more comfortable in their role of supporting others and felt less pressurised.

Some participants considered that experience had a positive impact on the way they processed negative feedback. This can be related to personality as well as emotional states. Some teachers, regardless of the degree of experience, may receive negative feedback as judgment which can have a negative impact on their self-efficacy however some others see it as constructive and helpful. Participants who were relatively new to teaching with less than four years' experience found that observing others' good practice had a positive impact on their efficacy.

Some of the participants mentioned the cumulative impact the years as teachers of pupils with autism had on their emotional state and self-efficacy in terms of challenges and workload. On the one hand, mastery and skill development over the years enhanced self-efficacy; on the other hand, cumulative stress and workload made teachers feel tired and reduced their energy, which could have an impact on the quality of their performance. Reduced performance could thus lead to a decrease in self-efficacy.

5. Does pupils' behaviour impact on self-efficacy?

In terms of managing behaviour, participants found this area to be one of the most challenging aspects of their role in educating children with autism and they talked about experience playing a key role in enhancing their self-efficacy in this area. Participants also mentioned that their efficacy in behaviour management saw the most variations compared to their efficacy in other tasks. This finding can be explained by the fact that children with autism, and especially those on the lower part of the spectrum, usually exhibit challenging behaviours. Further, it is very common for the behaviour of children with autism to fluctuate, and this may explain the variation or fluctuation in self-efficacy. In terms of experience, this can be linked to mastery, as discussed earlier, and previous successful experiences of managing behaviour.

6. Does managing staff affect teachers' self-efficacy?

There is minimal research on the impact of leadership on self-efficacy in special education. A few participants discussed the negative impact on their self-efficacy when staff would not follow their advice. The majority of participants with management responsibilities found managing others a difficult task. While discussing how their self-efficacy in managing people developed, they mentioned experience as a core element. Participants, even though they favoured collaboration and teamwork, felt, especially at the early stages of their roles, the responsibility to be able to provide appropriate advice and have 'all the answers'. Experience contributed to them not being affected by such events. As with the development of teaching efficacy and efficacy in managing, mastery experiences played a role in developing participants' management efficacy. They discussed that having experienced difficult situations in the past had a positive impact in their efficacy and made them feel more positive about their current managerial roles.

Feeling pressured by managerial responsibilities is not an uncommon experience. Fast, Burriss and Bartel (2014) pointed out that all managers face remarkable pressure to demonstrate efficacy. The pressure teachers felt as managers could be exacerbated by the fact that their advice and support would have an additional impact on pupil achievement. It was discussed above that childrens' regression could have a negative impact on efficacy, hence being a leader comes with a dual pressure in making a difference in teachers' performance as well as pupil progress.

7. Does teachers' self-efficacy vary?

Participants discussed the varied nature of their self-efficacy. Participants reported that their self-efficacy in behaviour was least likely to be related to self-efficacy in other areas.

They also found that their self-efficacy fluctuated at times and they attributed that to emotional states as well as teaching new children.

These responses are not surprising for two reasons. First, self-efficacy is task specific. Teacher efficacy is dependent upon the specific teaching situation (Ashton, Webb & Doda, 1983 in Ashton, 1984). Teachers may feel quite confident about their ability to manage certain behaviours in some students while feeling less competent with others. The second reason is that the profile of children with autism is highly varied and the skillset required for teaching children with autism is subsequently wide, including teaching, planning, behaviour management, staff management as well as dealing with parents and external professionals.; hence a teacher may not feel equally efficacious in all areas

In terms of fluctuation of self-efficacy, this is not a surprising outcome. It was discussed earlier that children's behaviour and learning, as well as stress, has an impact on teachers' self-efficacy. As mentioned earlier, when new children are admitted with different needs or changing behaviour, this may lead to a fluctuation of teachers' self-efficacy if teachers feel they are not able to deal with the new circumstances. The majority of teachers felt that a reduction in their self-efficacy was usually temporary and past mastery experiences as well as support from school and colleagues helped them regain their self-efficacy. In a way the belief in the capabilities of the team, collective efficacy had a positive impact in re-establishing self-efficacy levels.

8. Do perceptions of stress impact on self-efficacy?

Participants considered that the challenges of teaching children with autism as well as the busy nature of their role made them feel overworked and created feelings of doubt and losing confidence in their capabilities. All participants mentioned some degree of negative feelings generated as a result of their job or their personal lives. Not all of them however saw those as having an impact on their self-efficacy. A few of them mentioned that they have accepted stress and workload being part of what they do and in this way it impacted less on their self-efficacy. Ruble *et al.* (2013) also found a negative relationship between teacher self-efficacy and teacher burnout. It is expected that the demands of teaching children with autism will create stress.

Given the additional challenges that teachers of pupils with autism face compared to mainstream teachers one would expect that the impact would be greater on the former group. Even though this is not a comparative study it is positive to find that that impact in stress in self-efficacy was not common for all teachers. This is again related to experience and personality.

The findings also suggest that collaboration mediated the effects of stress to a degree and that emotional support was important in alleviating some of the pressures teachers face. A similar outcome was also noted by Goddard (2001) who said that when teachers as a group in school believe that the staff as a whole can be successful, they will be more likely to persist in their own personal efforts to achieve such success (Goddard, 2001).

9. What do teachers think about collective efficacy in their school?

The general consensus was that achievement is an outcome of team work and related to collective efficacy. However most participants said that is important for teams to have a highly efficacious and strong teacher to lead them. The responses indicated strong evidence of collaboration in all five schools. Participants clearly believe that teaching children with autism relies on teamwork and the capabilities of the team. This is consistent with the suggestion that individual teachers make a difference in student behaviour, but that the collective efforts of teachers also have a positive influence on students (Tschannen-Moran & Barr, 2004). As mentioned earlier, collaboration plays a major role in teaching children with autism. Belief in the capabilities of the team in teaching children with autism and the children's achievement is paramount in a context where a number of professionals contribute to the teaching of children with autism. It is thus no surprise that collective efficacy was valued highly since participants also valued collaboration highly. Da Costa and Riordan (1996) examined the relationship between teachers' sense of efficacy and teachers' willingness to engage in collaborative relationships with colleagues and found a positive relationship. Although these results are limited by their study's small scale, they point to the need for further examination of the two concepts.

10. Do Ofsted graded outstanding schools influence teachers' self-efficacy?

This study explored teachers' efficacy in outstanding schools. Schools are rated as outstanding by Ofsted when the quality of teaching, behaviour and welfare, leadership and management are outstanding. This means that when the quality of teaching is outstanding, pupils are achieving well, the leadership is strong, behaviour is managed well and staff are working together to meet the needs of the children with the support from parents and other professionals. This is in line with the feelings of collaboration which was discussed as being an important factor in enhancing self-efficacy. Participants also stated that feeling supported had a positive impact on their self-efficacy. There was a strong focus on behaviour and training, which is what would be expected from an outstanding school.

Senior leaders spoke about the impact of working in an outstanding school on their self-efficacy by pointing out the pressure, the difficulties for maintaining standards as well as the impact on their personal life. The majority were positive. They highlighted the importance of having high expectations, valuing staff and providing appropriate coaching and mentoring to empower teachers.

Each of the schools had their own culture and ethos. However, what was common in all outstanding schools was that they had high expectations and a clear vision which was shared amongst staff. Outstanding schools offered support and allowed teachers to develop their practice. They supported teachers with their challenges through coaching, discussions, modelling and training.

The factors outlined above provide valuable information for leaders and stakeholders about the factors affecting teachers' efficacy and could inform future school development plans. The analysis of the participants' responses provided a wealth of information and contributed to existing knowledge in the field. There is now more evidence as to what impacts on teachers' self-efficacy and why teachers are more efficacious in outstanding schools. Working with children with autism and associated impairments has a considerable impact on teacher's efficacy. Teachers' believe that self-efficacy and collective efficacy have an impact on pupil progress

and conversely pupil progress can also have an effect on teachers' self-efficacy in a reciprocal way. Collaboration is a major and important aspect of outstanding schools where staff feel that the progress of students is a result of a team effort and high collective efficacy. Challenging behaviour is a prominent characteristic that impacts on efficacy. Experience, training and support are positively associated with self-efficacy and can also mediate the effects of stress.

The answers to the research questions add valuable knowledge to the literature on self and collective efficacy of teachers of pupils with autism and they also give perspective to the broader teacher efficacy research. This study however does have some limitations as discussed below.

7.3 Key findings

The answers to the research questions revealed and highlighted the views of teachers on self-efficacy and collective efficacy and, the influence these concepts have on teachers' as professionals and also to an extent, as individuals. There are a number of prominent themes, which I present below as key findings. The reason for this choice is because these findings came out strongly from the analysis, they were represented by the majority of participants and, in my view, have the most impact on theory and practice.

Self-efficacy and collective efficacy were higher in teachers working in outstanding schools. As discussed earlier, these were schools that were rated outstanding because the progress of the children was judged as outstanding. This shows a positive impact of self-efficacy and collective efficacy on the achievement of pupils with autism. What is more important was the identified practice in outstanding schools, which has a positive effect on teachers' efficacy. Support, collaboration and training made staff feel more efficacious. The progress of pupils, as well as mediating the effects of stress on efficacy, was attributed to collaboration and collective efficacy. Sharing a common vision allowed participants to develop their practice and supported them through their challenges and thus had a positive

impact on self-efficacy. The effect of feedback on self-efficacy also provides useful knowledge to head teachers and senior leadership teams in order to reflect on their own practice and potentially appraisal systems in their schools. The study highlighted the positive effect of vicarious experiences on teachers' self-efficacy. In outstanding schools teachers are exposed to high quality teaching, which can influence their own self-efficacy positively.

Experience: Experience plays an important positive role in enhancing teachers' self-efficacy in teaching, behaviour management, gaining mastery and staff management. The quantitative results of this study revealed a moderate positive correlation between years of experience with collective efficacy and self-efficacy. The qualitative results revealed that previous experience in teaching pupils with autism made teachers feel more efficacious. However, previous experience in mainstream education was not conducive to improving self-efficacy. The responses revealed that previous mastery experiences made teachers feel efficacious but teaching new children with autism or changes in behaviour caused a fluctuation in teachers' self-efficacy. Fluctuation and variation in self-efficacy have rarely been explored in special needs or teachers of children with autism.

Challenging behaviour of pupils with autism is the area within teaching that mostly affects teachers' self-efficacy. Challenging behaviour is very common in children with autism and is an aspect that teachers often find difficult to manage which can make them feel less efficacious. The quantitative results revealed that the mean scores for self-efficacy in behaviour management were lower compared to other areas, excluding related duties. This was also supported by the qualitative results. This study revealed that challenging behaviour is the area within teaching, which mostly affects teachers' self-efficacy. This is important knowledge for schools and stakeholders. If schools focus on developing higher behaviour management efficacy in teachers, it is possible that this would lead to improved pupil behaviour management and outcomes.

7.4 Limitations

This study aimed to explore the self-efficacy and collective efficacy beliefs of teachers of pupils with autism in the UK. Due attention and consideration was paid throughout the study, however there are some limitations which are presented below in categories:

Bias: How a researcher writes and interprets is based upon his or her own bias, social, cultural, gender, class, and personal politics (Creswell, 2007). I have been an active practitioner in the field of autism and I have my own beliefs and characteristics as a teacher and as a leader. I remained mindful that this is an exploratory study and not a critique of a school's way of working. This is related also to the validity of interviews as described above. Reflexive analysis was used throughout the collection, analysis and interpretation of data. Transcriptions, text and field notes were constantly compared to establish accuracy.

Survey data: The questionnaires were completed by seventy-seven participants. The quantitative sample compared to number of the questions was not large enough to permit factor analysis. It was accepted that since the 'Teacher for Disabilities Self efficacy scale' questionnaire was used with minor linguistic edits and originated in the USA, which is a western culture with similar language the factors of the original questionnaire were accepted. Also, the responses came from both online surveys and postal questionnaires which may have caused a difference in responses, however the overall reliability was very high.

Sample interviews, time, locality: The sample for the interviews consisted of twenty-four teachers and senior leaders from five schools. The number of the schools is small and very specific in terms of type and Ofsted rating. This was necessary in order to permit in depth exploration. Also, due to time and locality limitations only participants from schools in the Greater London area were interviewed. This was not a major limitation because locality did not come up as being related to self-efficacy or collective efficacy. However, the interviews allowed for depth and the participants

elaborated on the issues raised. A larger number of participants would have provided richer data and a wider variety of views. The thematic analyses indicated saturation of the data leading me to believe that the responses may have not been very heterogeneous had a larger sample been selected. It would have added more value to the findings if non-outstanding schools had also taken part in the qualitative stage. However there was not sufficient time to conduct twice as many interviews and lower number of participants would have compromised the richness of data. Also, self-efficacy was explored in more depth compared to collective efficacy. This was again due to limited time. It was not possible for participants could dedicate more than thirty minutes for the interviews and I felt that this was not sufficient time to explore both constructs equally.

Gender: Even though gender was not set as a demographic factor in this study and hence its relation to self and collective efficacy was not explored, it must be noted that the majority of the participants were female. Male views were not represented equally. Had more male teachers taken part in the study comparisons could be made using gender as an independent variable. However, in the analysis striking difference in responses between men and female were not noted.

‘Outsider researcher’: While I have been a teacher of children with autism, and a school leader over many years, I was not at the time affiliated (directly or indirectly) with any of the schools within the body of the research. While there might be a notional sense of being an insider, this can be seen as ‘inside the general educational field’ and not ‘inside any particular institution within the research’. The advantage of the former is that I have professional insight into many of the key issues related to this research without, however, any of the potential influence or bias that might accrue from being within a particular school. Being ‘in the field’ has allowed me to approach schools and school leaders with a large degree of professional credibility (as – very broadly – ‘one of them’) while at the same time being detached and neutral as far as individual setting or teachers were concerned. To the respondents, then, I was certainly not an insider, but an ‘outsider researcher’. The fact that I was

at the time a senior leader may have made the senior leaders participants feel that I would be able to understand their position more. While at the same time non senior participants may have had feelings of intimidation or perhaps felt that I was not 'one of them'. Uncomfortableness was not sensed from my part at any stage of the interview.

My inexperience: There are limitations resulting from my inexperience in quantitative research. I had only completed one qualitative study before and published one paper with quantitative analysis. More experience in research may have resulted into decisions being made more quickly. I used this limitation as an opportunity to widen my knowledge on different methodological approaches and also to further develop my reflective thinking.

7.5 Significance of the study

While a number of studies, albeit limited, have looked into self-efficacy of teachers of pupils with autism, none of the studies explored the phenomenon in outstanding schools and none of those studies combined self-efficacy and collective efficacy together in the way this study did. Also, the majority of previous studies on the efficacy of teachers of pupils with autism was of a smaller scale. This study contributes to the knowledge and understanding of the self-efficacy and collective efficacy of teachers of pupils with autism.

The results of this study can provide an incentive for teachers of pupils with autism to look at their own practice, to reflect on their own self-efficacy. This process will allow them to consider what drives their self-efficacy, the factors that set them back and ultimately becoming more efficacious and effective practitioners. At the same time managers and leaders can look at the positive effects of self-efficacy and collective efficacy along with the factors that impact on them. In this way they can review the way they support staff as well as the importance of collaboration and training.

Children with autism will always be a very challenging cohort to teach because of the impairments associated with their condition . By exploring and enhancing self and collective efficacy teachers and leaders may be able to provide a better quality of teaching.

7.6 Unique contribution to knowledge

This study offered an insight into the views of teachers on self-efficacy and to a lesser extent on collective efficacy. This is only the second study and the only study which followed mixed method approach in the UK. The list below shows the elements of new knowledge produced by this study.

- The existing research on efficacy and achievement supports both arguments about the impact of efficacy. This study adds additional knowledge in relation to teachers of pupils with autism. Self-efficacy and collective efficacy were higher for outstanding schools which are also schools where children are achieving better compared to non-outstanding schools. This shows a positive impact of self-efficacy and collective efficacy on the achievement of pupils with autism.
- This study revealed a positive relationship between support from leaders and training on teachers' self-efficacy. The effect of feedback on self-efficacy also provides useful knowledge to head teachers and senior leadership teams in order to reflect on their own practice and potentially appraisal systems in their schools.
- The impact of vicarious experiences on teachers' of children with autism efficacy has been inadequately researched. This study showed that vicarious experiences make teachers feel more efficacious more so when the role models are thought to be appropriate. This study also showed that working with highly efficacious colleagues influenced teachers' self-efficacy positively.
- Experience plays an important positive role in enhancing teachers' self-efficacy in teaching, behaviour management, mastery and staff management. The quantitative

results of this study revealed a moderate positive correlation between years of experience and collective efficacy and self-efficacy. The qualitative results revealed that previous experience in teaching pupils with autism made teachers feel more efficacious. However, previous experience in mainstream education was not conducive to improving self-efficacy. The responses revealed that previous mastery experiences made teachers feel efficacious but teaching new children with autism or changes in behaviour caused a fluctuation in teachers' self-efficacy. Fluctuation and variation in self efficacy have rarely been explored in special needs teachers or teachers of pupils with autism.

- There is little research relating to challenging behaviour and self-efficacy in special education. Challenging behaviour is very common in children with autism and is something that teachers often find difficult to manage, making them feel less efficacious. The quantitative results revealed that the mean scores for self-efficacy for behaviour management were lower compared to other areas, excluding related duties. This was also supported by the qualitative results. This study revealed that challenging behaviour is the area within teaching which mostly affects teachers' self-efficacy. This is important knowledge for schools and stakeholders. If schools focus on developing higher behaviour management efficacy in teachers, it is possible that this would lead to improved pupil behaviour management and outcomes.
- This study explored the effects of stress and emotional states on the self-efficacy of teachers of pupils with autism and added to the minimal existing research in this particular field. The qualitative results showed that teachers overall found their jobs stressful, they often felt overworked and had doubts about??. Teachers felt that stress had some effect on their self-efficacy and for some participants the effect was more prominent and led them feeling inefficacious.
- Most of the research on collective efficacy in teachers is quantitative. The research on collective efficacy of teachers of pupils with autism is very sparse. This study offers an insight into the importance of collective efficacy in teaching children with

autism as well as collaboration. The quantitative results showed that collective efficacy was higher in outstanding schools and also collective efficacy was higher amongst members of senior leadership teams and also that collective efficacy was also moderately correlated with experience. The interviews revealed no differences in the views on collective efficacy between senior and non -senior staff. Teachers attributed success to team work and highlighted the importance of an efficacious leader.

- Self-efficacy and collective efficacy scores were higher in outstanding schools where support and training made staff feel more efficacious. Sharing a common vision allowed participants to develop their practice and supported them through their challenges and thus have a positive impact on self-efficacy.

7.7 Implications for practice

Self-efficacy affects teaching, behaviour and staff management which are all core elements of the practice of teachers of pupils with autism. The findings of this study can offer teachers opportunity for reflection and impel teachers and leaders to think of their own practice, what impacts on their self-efficacy and what they can do. Headteachers and school stakeholders can refer to those findings and review the situation in their schools, think about their own staff, and their self and collective efficacy. Information about the impact of support and training on self-efficacy can encourage senior staff to rethink their practices. Importantly, this knowledge can contribute to schools providing a better quality of teaching for their pupils with autism which leads to outstanding progress and achievement. Outstanding schools can look at the results and reflect on their practice and schools which are not yet outstanding can draw on suggestions to help them improve their teachers' self-efficacy and with that pupils' achievement.

7.7 Generalisability

The generalisability of the results of this study should be treated with caution. The results represent the views of the population studied. Saturation of the data during

thematic analysis provides confidence that the views shared by the participants of this study could relate to more teachers of pupils with autism.

7.8 Further Research

This study sought to explore self-efficacy and collective efficacy of teachers of pupils with autism in the UK. Self-efficacy in this study was explored deeper than collective efficacy. There were a number of areas within efficacy that this study sought to explore. Given the limited time for the interviews, not all the issues could be explored in depth. The study however added valuable knowledge to the limited research on efficacy of teachers for children with autism. Below is a summary of suggested future research. The impact of the school environment on teachers' self-efficacy is evident and needs further exploration. Future research could provide quantitative and more in depth results. Below are some suggestions of future research:

- Quantitative research could provide more robust evidence on the impact of leaders on teachers' self and collective efficacy. The impact of feedback should also be explored on a bigger scale.
- A focus on the impact of other teachers' efficacy on teachers' own efficacy would increase knowledge about the dynamics of the teams as well as collective efficacy.
- A longitudinal study on the effect of experience on the efficacy of teachers of pupils with autism could shed more light on this area and provide more reliable conclusions.
- A quantitative large scale study could review behaviour incidents and teachers' self-efficacy in order to identify more reliable results and look for possible correlations and relationships between the two variables.
- Future research could look more closely into the management responsibilities of teachers, senior teachers and all of those with leadership and managerial responsibilities in special schools and the impact on teacher self-efficacy.

- Future research could examine a larger sample of teachers of pupils with autism and also employ quantitative means to measure their stress in relation to several aspects of their self-efficacy
- A larger scale piece of research could compare self-efficacy and collective efficacy and examine the role of collective efficacy in more depth, as this study focuses more on teachers' self-efficacy rather than collective efficacy.
- A comparative study of teachers' efficacy in outstanding schools and those not yet judged to be outstanding could provide more accurate information as to why the levels of self-efficacy appear to be different.

7.9 Conclusion

This study was designed to provide a better understanding of self-efficacy and collective efficacy beliefs of teachers for children with autism. This study followed a mixed methods approach. The quantitative phase provided scores for the two constructs. It revealed correlations and associations between them as well as demographic factors. These results acted as a springboard for the second, and main, qualitative phase. The list of questions essentially aimed to explore the factors that impact on teachers' self-efficacy as well as explore teacher's views on collective efficacy.

The results of the study suggested that experience and children's behaviour are important factors that contribute to teachers' self-efficacy. Training, vicarious experiences, support and emotional state also impact on teachers' self-efficacy. Collective efficacy was thought to be important in the teaching and achievement of pupils with autism. Collaboration was a strong element and important factor in teachers' practice as well as collective efficacy.

Teachers and school leaders may wish to address the importance of self-efficacy and collective efficacy beliefs of teachers of pupils with autism. Exploring what shapes and enhances teachers' self-efficacy may have a positive effect on the delivery of teaching strategies and interventions. Examining the sources of efficacy and the

factors that enhance it can help senior leadership teams shape their development plans and deliver a 'value for money' service. It can help identify areas for future development and training. Exploring collective efficacy can provide valuable information to senior leaders regarding collaboration and team work.

Schools and senior leaders invest a lot of time, money and effort in identifying and implement the best practices for their pupils. They invest in resources and training but, from my experiences as a senior leader for a decade, are less likely to closely examine the teachers' views on their own practice and explore what teachers think and how they feel about teaching and implementing strategies, what are their beliefs in their capabilities within their role

I believe that the outcomes of this study, in examining the issues of teachers' self and collective efficacy in the context of schools for children with autism, will provide valuable information to teachers and school staff teams about their self and collective efficacy and increase the understanding of teachers' needs, feeling, experiences and provide perspectives to create an optimal learning environment for pupils with autism. I certainly reflected on my practice throughout this process and will continue to explore my own efficacy, work toward developing collective efficacy in my school and look at ways of developing the self-efficacy of the teachers in my school. This process has made me a better teacher, practitioner and senior leader. It impelled me to observe more, to be a better listener and, rather than judging others' capabilities, to look at what teachers think of them and how we can make them better, for the sake of the children.

'Someone somewhere this invented person is looking down on me and putting pressure on me and that invented person is me ...It is the case of right, get rid of that person and come back and say right, what's important in life and and what we are trying to do here for these young people.'

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Appendices

Appendix 1 - Survey Questionnaires



Dear Participant

Thank you for taking time to read about my study. Your input is very important. I am undertaking this study as part of my Doctoral degree. As a teacher myself I wish to explore our profession further, hear the teachers' voices and gain a deeper understanding about the concepts of self efficacy (SE) and collective efficacy (CE).

Teachers' efficacy is closely related to students' achievement (Ashton et al., 1982). There is however insufficient research evidence on SE and CE in special/autism schools. There is very limited SE and CE reported research related to teachers for children with autism. I will therefore wish to highlight the difficulties teachers for children with Autism are faced with in their teaching practice, explore the levels of efficacy within their teaching practice and highlight areas for future research and teacher training.

During this study I will seek to explore relationships between teachers' self efficacy and collective efficacy beliefs. Through biographic and demographic data I will look for relationships amongst factors such as the different teaching strategies, level of expertise, training and self/collective efficacy.

This survey consists of three multiple choice questionnaires and it will take about 25-30 minutes to complete.

You can choose whether or not to be in this study. Before you decide to participate, please read the information below carefully and then indicate your consent by ticking the 'Yes' box below.

All information you give will be completely confidential. Once collected by the researcher, myself, who will analyse the data. All information will only be used for the purposes of the research as part of group information and your identity will never be used. All information will be kept confidential and in a secure place and it will be destroyed once the research project is complete.

If you volunteer to be in this study, you can withdraw at any time without consequences of any kind. You may also refuse to answer any questions you do not want to answer and still remain in the study.

You can ask any questions before completing the online survey.

Thank you very much.

Yours faithfully,
Evelina Dimopoulou

Telephone: 07889800962 E-mail: evelina.dimopoulou@brunel.ac.uk

CONSENT FORM FOR STUDY ENTITLED 'SELF –EFFICACY AND COLLECTIVE EFFICACY BELIEFS OF TEACHERS FOR CHILDREN WITH AUTISM'

1. I have read and been given time to digest the information about the study and I understand that if I agree to participate in the study, all information I give will be completely confidential. Responses will be sent to the researcher who will analyse the data. All information will only be used for the purposes of the research as part of group information and your identity will never be used. All information will be kept confidential and in a secure place and it will be destroyed once the research project is complete.

I understand that if I volunteer to be in this study, I can also withdraw at any time without consequences of any kind. I may also refuse to answer any questions you I do not want to answer and still remain in the study.
In light of this information and by ticking the 'Yes' box below, I agree to take part in the study.

Yes No

Field details

2. What is your school's postcode? (please write without spaces e.g. SW111QS)

This information will only be used for data sorting purposes

Continue >

Teachers Self Efficacy Scale Disabilities (TSESD)
Adapted from Heather S. Dawson, The Ohio State University, Columbus, Ohio, May 2011

**Please provide ONE answer for each question
 and answer ALL the questions**

	None at all	Very Little	Some Degree	Quite a Bit	A Great Deal				
1	1	2	3	4	5	6	7	8	9
2	1	2	3	4	5	6	7	8	9
3	1	2	3	4	5	6	7	8	9
4	1	2	3	4	5	6	7	8	9
5	1	2	3	4	5	6	7	8	9
6	1	2	3	4	5	6	7	8	9
7	1	2	3	4	5	6	7	8	9
8	1	2	3	4	5	6	7	8	9
9	1	2	3	4	5	6	7	8	9
10	1	2	3	4	5	6	7	8	9
11	1	2	3	4	5	6	7	8	9
12	1	2	3	4	5	6	7	8	9
13	1	2	3	4	5	6	7	8	9
14	1	2	3	4	5	6	7	8	9

1 I can model positive behaviour for all students with autism.

2 I can be an effective team member and work collaboratively with other teachers, paraprofessionals, and administrators to help my students with autism reach their goals.

3 I can consult with an intervention specialist or other specialist when I need help, without harming my own morale.

4 I can utilise resources within the school and outside the school for the purposes of increasing my level of understanding of autism.

5 I can provide feedback to my students with autism in a way that is helpful and increases their self-esteem.

6 I can provide instructions orally in addition to print, to meet the needs of students with autism in reading and understanding information

7 I can use strategies such as taping a paper to the desk of a child with a autism to aid in their writing.

8 I can give consistent praise for students with autism, regardless of how small or slow the progress is.

9 I can remember to remind students with autism frequently of the things they need to complete/do to help them stay on task.

10 I can use reinforcers with students with autism consistently and effectively to increase desired behaviours in the classroom.

11 I can use time from other tasks to help a child with autism. For example, I can read the instructions three times in a row to help the student understand.

12 I can express empathy for a student who is struggling with a task i.e. reading.

13 I can break down a skill into its component parts to facilitate learning for students with autism.

14 I can demonstrate patience with a student with autism that has a high frustration level.

15	I can use a wide variety of strategies for teaching the curriculum to enhance understanding for all of my students	1	2	3	4	5	6	7	8	9
16	I can adapt the curriculum to help meet the needs of a student with autism in my classroom.	1	2	3	4	5	6	7	8	9
17	I can adjust the curriculum to meet the needs of higher-achieving students and lower-achieving students simultaneously.	1	2	3	4	5	6	7	8	9
18	I can be consistent with my timetable during the day so that my students with autism will benefit from the added stability in my classroom.	1	2	3	4	5	6	7	8	9
19	I can accomplish all of the tasks I am required to in a day with students with autism in my classroom.	1	2	3	4	5	6	7	8	9
20	I can adjust my lesson plans to meet the needs of all of my students, regardless of their ability level.	1	2	3	4	5	6	7	8	9
21	I can meet the individual needs of students with autism without singling them out.	1	2	3	4	5	6	7	8	9
22	I can change teaching strategies if my current plans don't seem to be working.	1	2	3	4	5	6	7	8	9
23	I can effectively deal with disruptive behaviours in the classroom, such as tantrums.	1	2	3	4	5	6	7	8	9
24	I can de-escalate a situation that is getting out of control when it involves a student with autism.	1	2	3	4	5	6	7	8	9
25	I can remain in control of a situation that involves a major temper tantrum in my classroom.	1	2	3	4	5	6	7	8	9
26	I can teach a lesson to students and then re-teach it without experiencing frustration.	1	2	3	4	5	6	7	8	9
27	I can anticipate the kinds of challenges having students with autism will bring to the classroom.	1	2	3	4	5	6	7	8	9
28	I can teach students to work together on projects, regardless of their ability level.	1	2	3	4	5	6	7	8	9
29	I can effectively encourage all of my students to accept each other in my classroom.	1	2	3	4	5	6	7	8	9
30	I can establish meaningful relationships with my students with autism.	1	2	3	4	5	6	7	8	9
31	I can create an environment that is open and welcoming for students with autism in my classroom.	1	2	3	4	5	6	7	8	9
32	I can manage a classroom that includes students with autism.	1	2	3	4	5	6	7	8	9
33	I can motivate students with autism to persevere, regardless of the level of emotion I may be experiencing.	1	2	3	4	5	6	7	8	9

34	I can be sure to treat all of my students with fairness and equity, regardless of their ability level.	1	2	3	4	5	6	7	8	9
35	I can model a skill for a child with autism so they may learn it more efficiently.	1	2	3	4	5	6	7	8	9
36	I can teach my students with autism using the same materials as the general education students	1	2	3	4	5	6	7	8	9
37	I can teach students with autism to take responsibility for their actions, such as teaching them to raise their hand to speak or teaching them how to follow instructions.	1	2	3	4	5	6	7	8	9
38	I can facilitate group learning in which students with autism can work together productively.	1	2	3	4	5	6	7	8	9
49	I can administer medication to students with autism who need it if I am asked to and have the proper certifications.	1	2	3	4	5	6	7	8	9
40	I can effectively transport students with autism from vehicles, desks, and to the toilet without becoming intimidated.	1	2	3	4	5	6	7	8	9
41	I can assist students with autism with daily tasks such as toilet use and feeding.	1	2	3	4	5	6	7	8	9
42	I can teach all children regardless of their ability level.	1	2	3	4	5	6	7	8	9
43	I can help all students learn to read regardless of their ability or autism.	1	2	3	4	5	6	7	8	9
44	I can interfere to stop a bullying situation between students with autism, without humiliating or offending them.	1	2	3	4	5	6	7	8	9
45	I can focus on the task at hand when there are several things happening in my class at one time. For example, I can effectively teach a maths lesson while a paraprofessional is working with one student and a speech-language therapist is conducting a session.	1	2	3	4	5	6	7	8	9

Collective Efficacy Teacher Belief Scale (CETBS) amended
Adapted from Tschannen-Moran, M. & Barr, M. (2004).

*Please provide ONE answer for each question
 and answer ALL the questions*

	None at all	Very Little	Some Degree	Quite a Bit	A Great Deal
1	1	2 3 4	5 6 7 8	9	9
2	1	2 3 4	5 6 7 8	9	9
3	1	2 3 4	5 6 7 8	9	9
4	1	2 3 4	5 6 7 8	9	9
5	1	2 3 4	5 6 7 8	9	9
6	1	2 3 4	5 6 7 8	9	9
7	1	2 3 4	5 6 7 8	9	9
8	1	2 3 4	5 6 7 8	9	9
9	1	2 3 4	5 6 7 8	9	9
10	1	2 3 4	5 6 7 8	9	9
11	1	2 3 4	5 6 7 8	9	9
12	1	2 3 4	5 6 7 8	9	9
Would you be willing to be interviewed at a later stage of the project? Please provide your email address below (Optional)					
<input style="width: 100%; height: 20px;" type="text"/>					
Please note that ONLY the researcher has access to this information and your details will NOT be shared with any other parties.					

Demographic Teachers Questionnaire

Please provide ONE answer for each question and answer ALL the questions

	Head	Deputy head	Assistant head	Lead teacher	Teacher	
1	Indicate your position at school					
2	Indicate your age	30-39	40-49	50-59	60 & greater	
3	Indicate the years of teaching experience you have including this year	3 or less years	7-10 years	11-15 years	16 or more years	
4	Indicate the years of teaching experience you have teaching children with autism	3 or less years	7-10 years	11-15 years	16 or more years	
5	Indicate the years of teaching experience you have teaching in ASD schools	3 or less years	7-10 years	11-15 years	16 or more years	
6	Indicate the number of years working for this school	1 year	4-6 years	7-10 years	11-15 years	16 or more
7	Indicate the overall attainment of your students (in P levels)	P1 – P4	L1 – L2	L3 above		
8	Indicate the specific ASD intervention you received training	ABA	TEACCH	FLOOR TIME	SENSORY INTEGRATION THERAPY	None
9	Indicate the teaching intervention you are currently implementing	ABA	TEACCH	FLOOR TIME	SENSORY INTEGRATION THERAPY	None
10	Is this your preferred teaching intervention?	NO				
11	Indicate the type of training you have received for your teaching intervention	INSET	CONFERENCE	Other	None	
12	Indicate whether you have received training on behaviour management	Yes				
13	Indicate the frequency of supervision you are receiving	Every half term	Twice a year	Once a year	Never	
14	Indicate the level of your qualification	DEGREE	DOCTORATE	OTHER		
15	Indicate the level of your qualification in autism	DIPLOMA	DEGREE	MASTER'S	DOCTORATE	OTHER

Would you be willing to be interviewed at a later stage of the project? Please provide your email address below (Optional)

Please note that ONLY the researcher has access to this information and your details will NOT be shared with any other parties.

UK Teachers' Self Efficacy and Collective Efficacy of Their Capabilities in Teaching Children with Autism

Thank you!

Your input is highly valued, and we appreciate the time you have taken to participate in the "UK Teachers' Self Efficacy and Collective Efficacy of Their Capabilities in Teaching Children with Autism" study.

For questions relating to this survey or the use of BOS at Brunel University, **please contact:** Evelina Dimopoulou (Evelina.Dimopoulou@brunel.ac.uk)

Appendix 2 - Consent letter – Survey

From: evangelia dimopoulou <Evelina.Dimopoulou@brunel.ac.uk>

Date: Tuesday, 21 February 2012 at 21:09

To: evangelia dimopoulou <Evelina.Dimopoulou@brunel.ac.uk>

Subject: Request for completing PhD Online Survey - Teachers - Autism

Dear colleague,

I am inviting your participation in this study which aims to examine *Self-Efficacy and Collective Efficacy Beliefs of teachers for Children with Autism in the UK*. Your input is very important.

This survey is one component of my Doctoral Study at Brunel University, supervised by Professor Mike Watts and Dr Paula Zwozdiak-Myers. It is also supported by the National Autistic Society <http://www.autism.org.uk/get-involved/volunteer/take-part-in-surveys-and-research/research-recruit-people-or-participate/research-projects-children-and-young-people/efficacy-beliefs-of-teachers-working-with-students-with-autism.aspx>

As a teacher myself I wish to explore our profession further, hear the teachers' voices and gain a deeper understanding of teachers' perceptions of their own capabilities (SE) and of their capabilities as a team (CE) in teaching children with autism. You will be part of an innovative study as these areas have not been previously explored in the UK at this scale.

This survey consists of three multiple choice questionnaires. You can access it here: <https://surveys.brunel.ac.uk/efficacy>

Please kindly forward this email to your staff and colleagues.

Thank you very much in advance for considering your participation.

Kind regards,
Evelina Dimopoulou

**PhD Candidate | School of Sports & Education | BRUNEL University, London
evelina.dimopoulou@brunel.ac.uk | 0788 9800 962**

Appendix 3 - Consent letter – interviews

-----Original Message-----

From: Evangelia Dimopoulou [<mailto:Evelina.Dimopoulou@brunel.ac.uk>]

Sent: 02 October 2014 13:04

To: xxxxxxx School

Subject: PhD Interviews

Dear xxxx,

I am doing doctoral research on Self-Efficacy and Collective Efficacy Beliefs of teachers for Children with Autism in the UK. In other words, I wish to explore our profession further, hear the teachers' voice and gain a deeper understanding of teachers' perceptions of their own capabilities (SE) in teaching/managing children with autism and of their capabilities as a team (CE) again in teaching children with autism. You will be part of an innovative study as these areas have not been previously explored in the UK at this scale.

I have already completed a series of questionnaire country wide - please see sample attached- and now I am looking to get a better understanding on the factors affecting SE and CE through semi-structured interviews. I am looking into what affects teachers' own perceptions (self -fficacy) of their confidence in teaching, managing behaviour, working with other professionals as well as what they perceive they can do as a team (collective efficacy).

I am interviewing two members of the leadership team and three teachers from each school.

I would be very grateful if you and some of your staff could dedicate twenty minutes of your time to answer my questions. In return I would be very happy to provide you with some feedback on the levels of self and collective efficacy in your school as research suggests that it is directly linked with progress and attainment. Even though I am working at the moment, I am the Assistant Heads/Head of Assessment at the Bridge school in Islington, I can take time off to visit you at any time that is convenient for you and your staff.

This is a link to a paper I published recently explaining my work <http://www.infonomics-society.org/LICEJ/Self%20Efficacy%20and%20Collective%20Efficacy%20Beliefs%20of%20Teachers%20for%20Children%20with%20Autism.pdf> and there is another one coming out soon. This is my academic profile <http://www.brunel.ac.uk/sse/education/research-students/ms-evelina-dimopoulou><http://www.brunel.ac.uk/sse/education/research-students/ms-evelina-dimopoulou>
<http://www.brunel.ac.uk/sse/education/research-students/ms-evelina-dimopoulou>
I look forward to hearing from you.

Many thanks and kind regards,

Evelina Dimopoulou

Appendix 4 - Interview Questions

1. Do you think your self efficacy affects your teaching?
2. Do you think that your of self-efficacy impacts on student achievement?
3. Do school leaders affect your efficacy?
4. Do observations and feedback affect your efficacy?
5. How do you feel about managing the behaviour of your pupils? What has helped you developed your skills in this area
6. How do you feel about managing staff? What has helped you developed your skills in this area
7. How difficult is it to contribute to, or shape, a teacher's self-efficacy belief once it is developed?
8. How have professional development experiences affected you throughout your career?
9. How does your colleagues' efficacy affect yours?
10. Do you think collaboration with your colleagues around you and how they feel about teaching, affects your personal feelings of self-efficacy in the classroom?
11. Do you think collective efficacy influences progress?
12. Have you ever worked somewhere where you were surrounded by people with low self-efficacy, and did this affect your level of self-efficacy?
13. Do factors outside of school affect your efficacy?
14. Do you think your self-efficacy varies in different aspects of your job?
15. Are you feeling more efficacious in some areas than other?
16. Do you think your self-efficacy fluctuates?
17. Do you think your years of experience have contributed to your efficacy in teaching children with ASD?
18. Do you think there is anything special about working in an Outstanding school in terms of developing your self-efficacy?

19. Is there anything else that you would want me to know in regard to how successfully you feel that you can make an impact on the students' lives

Appendix 5 - Participant profiles

P-ONE	Exp: 11 to 15	Exp: ASD 1 to 15	Role: Teacher
<p>Participant 1 is a senior teacher in a school for children with autism with more than eleven years' experience. She believes that efficacy affects teaching in general and that it has affected hers. She also feels that children are able to sense and respond to teachers' confidence, especially if it is low. She mentioned that training had positively impacted on her self-efficacy. In terms of observations she feels that negative feedback can affect her but she is more interested in the constructive comments. With experience she has improved her management skills and she is also not affected when she sees others being more efficacious than her. She mentioned experience a couple of times. She also mentioned how she feels that her self-efficacy has fluctuated especially after she came back from time off due to personal reasons. Her self-efficacy in terms of behaviour management seemed to be high and she mentioned that experience had a positive effect on this area. She also felt that collaboration is important and that there is a high sense of collective efficacy in the school.</p>			
P-TWO	Exp: 11 to 15	Exp ASD: 11 to 15	Role: Teacher
<p>Participant 2 is a female teacher in an ASD school. She had a senior leadership role at another school, which she left to be a class teacher. She feels that experience, training and knowing the children affect her self-efficacy. She finds it varies and that it has fluctuated. She sees observations as an opportunity to get someone else's views and ideas about her teaching as she becomes too engrossed in it. However negative feedback knocks down her self-efficacy. She mentioned pressure and stress a few times. She finds workload stressful, the demands of parents, her commute or other personal events causing her stress. At one stage she took time off because of stress and workload.</p>			
P-THREE	Exp: 11 to 15	Exp ASD: 7 to 10	Role: Teacher
<p>Participant 3 is a female teacher in an ASD school. She mentioned that uncertainty affects her self-efficacy. She feels that she wants to know that she is doing things the right way and hence verbal persuasion and praise have a positive effect on her self-efficacy. She is realistic about the fact that children's progress varies and this does not affect her self-efficacy. She likes learning from others and others' high efficacy does not affect her morale. She mentioned experience a few times and that she learned on the job. She works collaboratively and will seek professional and also emotional support. Her SE varies and also fluctuates. Events in her personal life may affect her self-efficacy but she has not taken leave due to low efficacy or stress.</p>			
P-FOUR	Exp: 11 to 15	Exp ASD 7 to 10	Role: AHT

Participant 4 is an assistant head in an ASD school. She believes that high efficacy means that one would teach better but not that it would necessarily have an impact on progress. She mentioned that she found children deskilling because of their level of need and unpredictable behaviour. Her self-efficacy has fluctuated a lot during the years, Also she feels that due to not having her own class and the relationship with the children she is not always able to give the right advice. She feels that time out of class may affect her teaching efficacy but she takes her HT as an example who is able to provide helpful advice after years out of class. She feels pressurised by the workload (not necessarily the nature of the job) and the fact that the school is outstanding and the standards are high. She feels that this is to an extent a shared belief amongst colleagues. She feels that collaboration is strong at school and values CE higher than SE

P-FIVE Exp: 7 to 10 Exp ASD 3 OR LESS Role: Teacher

Participant 5 is a female early years teacher in an ASD school. She didn't come across as very confident. There were lots of 'erms' in her answers as she used the word 'whatever' a high number of times. She felt that negative feedback affected her but that also during the years she felt that her confidence grew she was able to challenge the feedback. She took some time off at one point and took her time to get her confidence back and get back on track.

P-SIX Exp: 7 to 10 Exp ASD: 3 to 7 Role: Senior Teacher

Participant 6 is a male teacher in his mid 40s. Ten years ago he left his well-paid job to change careers and become a teacher. He is now a middle leader. He feels observations affect him if he doesn't trust the leaders who observe him. His voice was confident. He seemed slightly bitter about the fact that he doesn't earn enough and has financial difficulties and also he doesn't have the time to do more for his job or progress. He values experience and his confidence has grown. He feels more efficacious and confident around people or environments where he thinks he is more knowledgeable than others.

P-SEVEN Exp: 11 to 15 Exp ASD : 7 to 10 Role: AHT

Participant 7 is a female Assistant Head in a school for children with autism. She was teaching in mainstream and when she came to SEN she felt her self-efficacy dropped as she was amongst people who knew more than her and she found that deskilling. She feels it is difficult but saw her self-efficacy developing as children were making progress. She felt more efficacious amongst less experienced staff when she felt she knew more. She mentioned more than five times in her interview how as a leader 'she doesn't have all the answers'. She felt more efficacious seeing staff implementing her suggestions and progressing. She had trouble accepting that she is not always able to help staff and talking to her HT has helped. With experience and in line with the ethos of the school she realised the importance of coaching and helping people develop their skills. She thinks praise is important. Her self-efficacy was affected by not spending enough time in class and not having a strong relationship with the children and that also made it difficult for her to provide advice. She believes in team work and even though as a leader it affected her confidence 'not knowing all the answers' she said that she quickly as a teacher realised the importance of accepting help from support staff the value of praise and listening to them. She feels that expectations should be lower for less experienced staff and they should be judged differently. She was articulate and came across as being rather concerned and pressurised by her position of authority. However she was calm and rather self-aware but perhaps also self-critical.

P-NINE Exp: 4 to 6 Exp ASD 4 to 6 Role: Teacher

Participant 9 is a trained teacher who works as a high level teaching assistant with teaching responsibilities. She came across as quite laid back. She also does drama after school. She said

she feels confident. A number of times she made reference to emotional elements e.g. how she would receive negative feedback would depend on the day she had, she turned to her team for mutual emotion support. She would like to be more involved with parents. Unlike other colleagues from the same school she feels the school wants her to deliver in a certain way or she did not seem to feel the freedom. She gave short answers and did not seem to be that confident with the term self-efficacy at the start but during the interview she as giving more elaborate answers.

P-TEN Exp: 16 or more Exp ASD: 3 to less Role: Teacher

Participant 10 is a female supply teacher in her mid thirties. She has experience in behaviour management, which has helped her not feeling 'daunted' working with autism children but hasn't given her enough skills to teach children with autism. She was very enthusiastic and passionate about what she does. She is very passionate to learn about children, management, approaches. She feels very strongly about 'time' for meetings etc. she mentioned 'structure' many time in the school and her life and how it helps her. She wants clarity and clear expectations. She feels staff with low self-efficacy are insecure and they are 'bullying' especially those either new or not part of the crowd. She wants to do well for the school and her career. She finds outstanding school, gives her clarity. She trusts her manager and turns to her. Her self-efficacy seems to be developing in terms of her teaching. She mentions a lot that she is 'learning' in terms of managing behaviour and her self-efficacy seemed high but not as high in relation to managing staff. Her voice was confident and felt as if she really wanted to communicate all the things she feels strongly about. Also, she feels it is ridiculous that good teachers are encouraged or forced to move up to management. Speaking about TAs she mentioned a few times that she is mindful of their low salary and set working hours and this seems to have some impact on her expectations of them and she is probably apprehensive to put more pressure even though she feels in her school she needs to 'push'.

P-ELEVEN Exp: 7 to 10 Exp ASD: 7 to 10 Role: DHT

Participant 11 is an Deputy Head is in a mainstream school with an autism unit. She has been there since she was an NQT. She sounded rather measured. She spoke incredibly highly of her HT and a number of times called him inspirational. Her self-efficacy in terms of teaching children with ASD seemed low or irrelevant because she is not involved. She believes strongly that it is about the team effort. It doesn't harm her morale when staff don't listen and she finds it important for the support to be always available and ready. In terms of her staff management self-efficacy it did not come across clearly. She realises people are different and she will just go and ask for her HT's help. She feels the SLT is very strong and kept on promoting that and she feels that this is what works well with staff knowing who to go to and that support is available.

P-TWELVE Exp: 4 to 6 Exp ASD: 3 or less Role: Teacher

Participant 12 is an early years teacher in a school with an autism unit with four years' experience. She has child with autism in her class. She relies a lot on TA support and values their views. In terms of behaviour she feels at times helpless but feels that patience coming from working with young children helps. She finds that support is available to her and says the DHT is fantastic. She feels SLT deals with parent issues. She has high expectations of herself to provide for children who come from deprived areas and feels that she is putting more pressure on herself than the school does. She finds teaching a challenge but welcomes it and feels it is important to get to know the children and she believes they can improve a lot.

P-THIRTEEN Exp: 16 or more Exp ASD: 3 or less Role: AHT

Participant 13 is Head of an ASD unit in a mainstream school She had many years of experience in mainstream, which she thinks did not help her with teaching children with autism. She said something interesting - that self-efficacy levels remain as long as one is in touch with the children, which is what another AHT also said. Behaviour management, she feels efficacious with but not that much in teaching skills. She finds non-verbal children challenging. Her self-efficacy in terms of managing people doesn't seem to be that high but developing. She doesn't take it personally- she thinks people's responses to feedback depend on their moods. She believes in praising people and thinks she should be doing more of that. She likes to allocate staff based on their confidence levels. She came across as very honest and reflective about her practice. She was open to mention things she feels she could change. She was open to say that she doesn't feel her HT is always supportive of the unit (as opposed to her other senior colleague who found him inspirational). She feels the high expectations of the school and the work load has had an impact on her social life. She believes that one must subscribe to the ethos and philosophy of the school otherwise they shouldn't be there. On that, she made various references to staff commitment, finding that it varies and affects their job and that she feels she should motivate them.

P-FOURTEEN Exp 7 to 10 Exp ASD 4 to 6 Role:ST

Participant 14 is a female senior teacher in a special school. She very much saw 'self-efficacy' as self-reflection. She has an allocated time each week when she reflects on her practice. She feels more efficacious teaching as opposed to planning which she finds more difficult. Things that make her reflect are: observations, training, talking to her husband, which is a proactive reflection process and not necessarily a result of . She feels she wants to be passing on good practice. Observations make her reflect on her own teaching. conversations with parents also make her reflect especially when parents are not very happy. She feels self-efficacy can depend on someone's mood. Experience again promotes reflection and it helps her looking back at what she was able to do in the past. She values time for meetings with her team and SLT and finds this promotes her efficacy. She feels working in an outstanding school helps her become an outstanding teacher. She doesn't feel that burnout is necessarily related to low self-efficacy and she never considered quitting. She was calm and her voice was confident. She used reflection as a word or meaning a great deal of time. She came across as efficacious overall and as valuing her team.

P-FIFTEEN Exp: 16 or more Exp ASD 11 to 15 Role: HT

Participant 15 is a head of a primary special school. She thinks self-efficacy is a combination of skills, knowledge and understanding and how it all combines with confidence. She believes in treating staff as individuals in a differentiated way, similar she says to the classroom. She feels personality as well as confidence plays a big role in staff's self-efficacy and how efficacious they perceive themselves to be. She has an interesting view about training and she sees it also as an affirmation of good practice or opportunity for reflection. She feels experience is strongly related to self-efficacy. She feels mastery having overcome difficulties before makes her confident of managing difficult situations. She finds teams are a stronger force than the individual. She feels she is now more open to staff to speak to her and ask for advice but again it is personality driven. Also thinks high self-efficacious teachers can drive improvement.

P-SIXTEEN Exp: 7 to 10, Exp ASD:4-16 Role: Senior Teacher

Participant 16 is a female senior teacher in an SEN school. She used to teach overseas before she came to the UK to teach in this school. She started as a supply teacher and she is now a senior teacher. She thinks that self-efficacy affects teaching and the way the children respond. She felt that the efficacy of the teacher has an impact on the efficacy of the team. She felt that efficacy is task specific and that efficacy in teaching and behaviour both need to be balanced to promote learning. She thinks experience matters and she related it to self awareness. She mentioned being self aware a few times and making things 'your own' as opposed to looking at others and trying to copy what they do. She found managing staff daunting and she felt very insecure but with time and support she felt more comfortable. She spoke about being positive and having appropriate role models. Generally, she highlighted the importance of vicarious experiences. She felt that the fact that her school is growing propels her to become better.

P-SEVENTEEN Exp:7 to 10 Exp ASD: 4 to 6 Role: Teacher

Participant 17 is a teacher in a special school. She teaches the Early Years. She thinks self-efficacy affects someone's teaching and she spoke about having self-belief (a number of times) and having high expectations of yourself and the children as she thinks most people in SEN schools have low expectations of the children. She thinks self-efficacy is related to achievement and one has to be organised and creative. When children achieve it pushes her further. Others' self-efficacy affects her in the way that she wants to support those with low self-efficacy and learns from those with high self-efficacy. She enjoys being given trust and freedom by the leaders even though she preferred structure early in her career. Her self-efficacy in managing behaviour is high but she values the input of the team as well as external professionals. She thinks achievement is about collective efficacy but a team needs a strong teacher. She likes having systems in place as is the case in her outstanding school and having high expectations from staff and children. She finds workload and paperwork stressful. She took a break once she said she didn't agree with where her school was going. She was confident, passionate and came across as highly efficacious.

P-EIGHTEEN Exp: 4 to 6 Exp ASD: 3 or less Role: Teacher

Participant 18 is an EYFS teacher in a special school. She works very closely with participant 17. She thinks self-efficacy affects her teaching and she sees a link between confidence and outcomes. She mentioned a few times that she takes things on board when she trusts and values the expertise of others. She feels very privileged to be in an outstanding school. She likes the fact that she has freedom to plan and teach and that praise by leaders is meaningful. She finds the school makes her become better but not complacent. She values her team and feels responsible for their effectiveness. She feels that personal factors affect her efficacy and believes that to be highly efficacious you need to be well balanced in and out of school. Her self-efficacy for behaviour management grew with experience and she once contemplated leaving her job when the methods didn't work but remained resilient. She has high standards and high expectations. She came across as having high self-efficacy in teaching and now in managing behaviour. She is eager to learn new things and improve herself. She feels enthused while she is doing her masters in SEN. Her voice was confident, there was no hesitation in her voice when talking about uncomfortable situations especially given that I had known her professionally.

P-NINETEEN Exp:7 to 10 Exp ASD 4 to 6 Role: Teacher

Participant 19 is an outreach teacher in an SEN school. She used to teach in Ireland and she has been in the UK for two years. She thinks self-efficacy affects teaching in the sense that teachers are more enthusiastic (have brio), creative and experimental and hence develop more exciting lesson which will lead to achievement. Unlike other participants she finds that leaders don't seem to be involved in what is happening in her class, based on her previous experience, they won't give praise but finds that in her current school they don't things to boost staff morale e.g.

attendance certificates. She thinks though that when leaders invest on resources it 'inspires her up to do better'. Challenging behaviour almost broke her in the past and her self-efficacy was low and was feeling helpless until an expert praised her. Verbal persuasion appeared a few times in what she said. Regarding experience, interestingly she didn't think that is relevant to self-efficacy but she made references to self-esteem. However, she said that it is with experience that she learned to not take things personally and the fact that children may not make progress does not affect her. She found that parents and in particular difficult ones affect her self-efficacy. It doesn't harm her morale to ask others. Also her self-efficacy is not affected by observations unless an expert who she respects tells her she has got it wrong. Also, she values the team. She thinks is more about the teachers and that TAs respect high self-efficacy teachers.

P-TWENTY Exp: 4 to 6 Exp ASD 4 to 6 Role: Teacher

Participant 20 is a teacher at a secondary special needs school. He is a trained musician and actor. His teaching SE has been affected by learning from others and persevering. He mentioned perseverance and 'being hungry' a number of times like an actor or musician and not giving up until you get it right. He sees teaching as a journey you never arrive and a lot of things change so he thinks one has to keep an open eye and learn. He values parental input a lot and he spent quite some time elaborating on the impact information he gets from parents has on his teaching. He thinks the most important feedback is the one he gets from his students. He values his team. He worries about managing people and finds it very difficult. He tries to diffuse situations and draw energy from other 'the radiators not the drains'. He was very animated and made a lot of parallels between his teaching and his acting. He spoke about how one learns from being challenged.

P-TWENTYONE Exp: 16 or more Exp ASD 16 or more Role: ST

Participant 21 is a senior teacher in an SEN school. He has 23 years of experience and feels that this is important and he is adamant that for anyone to become a senior teacher they need to have at least a decade of experience. He sees himself as being pivotal in the learning of his students and the team, which he also characterizes as pivotal. He thinks achievement is down to the culture of the team and the culture of the school. He doesn't seem to be fazed by hardships. He likes a challenge and he has learned. It is interesting that he didn't seem to think that there is anything special about outstanding schools that drives self-efficacy however he mentioned the impact it had on him that senior staff trusted him, provided training and gave him freedom to practice. He is still learning from others and he is glad to be able to pass on good practice to the younger teachers. He had a soft voice and at times he would stress the words he felt passionate about e.g. pivotal, culture, team, strategic. His answers were not always directly related to the questions. It seemed that there were things he felt very passionate about and wanted to communicate.

P-TWENTYTWO Exp: 16 or more Exp ASD 16 or more Role: Teacher

Participant 22 is a male teacher in a special school. He has taught in that school for 18 years and 12 years before that in a mainstream primary. He thinks it is important to communicate effectively with his team and he feels his self-efficacy in that area is high. He likes working with people who are better than him and this doesn't harm his morale. He still feels responsible for his students. He finds it difficult to set the curriculum and targets for the ones he doesn't know that well as in his class teaching is 1:1, on this occasion and also when students are not making enough progress he will go to ask for advice and support and involve all professionals. He is a trained artist and he spoke in length about his passion for art and that he wished he could quit teaching if he could. He considers himself an artist not a teacher. He still wants to be good at what he does. He came across as very honest and self-aware. He is aware where his self-efficacy is high such as making resources and sensory stories. He finds leaders approachable and he seems to like talking things through. He welcomes constructive criticism. His self-efficacy in managing behaviour developed and seems to be rather high now. He made a lot of references to staffing and how not having enough staff to have an effective (he used that term a lot) lesson is something that can harm his morale.

P-TWENTYFOUR Exp:11 to 15 Exp ASD 7 to 10 Role: Teacher

Participant 24 is a female senior teacher in an autism school. She was teaching for many years in another school and felt she wanted a change. She finds having an inspirational HT and training has an impact on her SE. she welcomes negative feedback and she sees it as improvement she was affected at the beginning but not now. She seems to be quite self-aware about her strengths and weaknesses. Her personal life does not affect her job but difficult parents affect her self-efficacy. She feels the pressure to be a good role model for her staff and she finds that daunting. She doesn't mind others being better than her and thinks that it makes staff feel good when you 'steal' their ideas. She finds her SE fluctuates even within a day. She feels more efficacious when she sees staff and students making progress and she doesn't take it personally when students regress she sees it part of their ASD. She finds it difficult not being in class all the time. It doesn't affect her delivery but she feels pressurised having almost two jobs.

P-TWENTYFIVE Exp: 16 or more Exp ASD 16 or more Role: AHT

Participant 25 is an AHT in a school for children with autism. What has affected her self-efficacy is experience, knowing she could do it, having an inspirational HT who also believed in her. It boosts her efficacy that she is in a position to give advice to other schools and that others seek her expertise. Her self-efficacy in behaviour management has developed but she once considered leaving because of the children being physical and making no progress. She used the word 'different' frequently in almost all contexts. She appreciates staff are different and they have different strengths and she is fine with that herself too and self-aware. She likes to learn from other. Interestingly the fact that she is not in class full time does not affect her SE because she feels the other parts of her role complement her teaching. She feels also more efficacious now that she has completed a master's which gave her more insight of the children's learning. She found it hard and daunting coming back to teach after maternity leave and was helped by staff and HT and verbal persuasion. Her voice was confident and she was being honest. She came across as a strong and reflective leader and practitioner

P-TWENTYSIX Exp: 16 or more Exp ASD 16 or more Role: Teacher

Participant 26 is a male teacher at an ASD school. This was a rather controversial interview for the most part. He sees his SE being influenced by mastery experiences to an extent. He doesn't think schools do anything to affect/enhance his self-efficacy. He feels observations are subjective, are just someone else's view on what he does and he wouldn't probably change his way but later on mentioned that negative feedback may have an impact on his confidence and make him reflect. He also feels that this is a topic that brings staff together as they tend to talk about it a lot. He doesn't see training as being relevant always. He said an interesting quote in relation to experience. 'The module you start with unconscious incompetence and end up with Unconscious competence'. He mentions mastery but also said that since situations and children are so different each year experience may not always help. He feels peer observations don't occur often if at all. He recognizes everyone has strengths and he sees that working in a collaborative way and doesn't feel his morale is harmed at all.

**Although the numbering goes up to, there were 24 participants who were interviewed. Participant '8' withdrew and due to a technical fault on mistake there was not number '23'.*

Appendix 6 - Characteristics of five schools

School 1 - ASD school

Self-efficacy: In this school the standards and the expectations are high. Both of staff and children. All teachers felt that self-efficacy has an impact on pupil progress and all teachers felt they ought to be efficacious. This came from the senior staff in terms of this is what they were working on, to build staff self-efficacy and confidence through support, expertise in the school, coaching and training. All teachers admitted that their self-efficacy was low when they started but they all felt they received the right support. All staff had a good understanding of the needs of their children however they all said that challenging behaviour and lack of progress can lower their self-efficacy but with the right support from senior staff and training their efficacy can rise. They all mentioned that experience at that school was what had a big impact on their efficacy. All staff found the workload overwhelming. Leaders also developed their self-efficacy through experience. It was evident that what leaders thought teachers need to develop their self-efficacy is what also teachers expressed. Teachers were given freedom to develop their practice within an area of structure and expectations. In terms of verbal persuasion, staff appreciated praise. They were honest to say that observations may affect their efficacy but at the same time they also build resilience.

Collective efficacy: The responses of the participants of this school indicate a general sense a good degree of collective efficacy.

School 2 – Mainstream, ASD Unit

Self-efficacy: In this school the unit is a small part of the school. Staff who work in the unit feel that their self-efficacy developed through experience and training. Communication and dialogue came out as a strong element in this school. Also, all staff felt there is clarity of expectation and structure. teachers favoured having structure. Participants also expressed that respecting their leaders is important in appreciating feedback. Participants felt that their efficacy has an impact in the progress of the children

Collective efficacy: Participants said that they rely a lot on their teams and they believe in the capabilities of the team in terms of learning and behaviour. Participants generally highlighted the importance of staff knowing the children. They spoke about the difference and changes children with autism have in their moods and behaviour and it is with the variety of skills, knowledge and collective support that they are able to achieve outcomes.

School 3 - ASD school

Self-efficacy: This is a primary special needs school with the majority of children having autism. Two things that were prominent from the comments were reflection and individual approach. Teachers and senior staff were consciously reflecting on their own practice by themselves or with their teams. They seem to be aware of themselves as teachers. They felt that self-efficacy impacts on progress and when children are making progress this also boosts their self-efficacy. Behaviour affected their efficacy and one teacher contemplated leaving her job because of her self-efficacy in behaviour management being low while not being able to manage extreme behaviours. In terms of individuality, both teachers and senior staff spoke of how staff are treated based on their personality and indeed perceived efficacy which helps them develop. Teachers pointed out that training impacts on their self-efficacy and often see it as validation that they are doing a good job. They felt that the school is constantly evolving and so is their practice which motivated them and had a positive impact on their self-efficacy. Managers took time to meet with staff and also the school involved the therapy teams a great deal. Experience was an important factor in shaping teaching and management self-efficacy.

Collective efficacy: The responses of the participants varied slightly. They all appreciated the efforts of the team, however they highlighted more the strengths of the individual. When asked about collective efficacy the responses of the senior leaders were more targeted towards the differences in the individuals as opposed to the team. The teachers seemed to have stronger beliefs about the capabilities of their teams but they more referred to their classroom as opposed to the whole school.

School 4 – ASD school

Self-efficacy: Participants in this school felt self-efficacy is linked to progress but together with collective efficacy. Two of the participants were the most animated of all. They spoke with great enthusiasm about their roles. What was common in all the participants was that the way children respond, the feedback they get from the pupils is what informs their practice and their self-efficacy. They mentioned that training and experience played a big role as well as support from leaders and colleagues. Teachers felt that the fact that leadership organised training where they had the chance to discuss their difficulties had a positive impact on their self-efficacy and they also felt supported. there was a rather strong element of perseverance. Two of the teachers even though they consider themselves to be artists by profession more than teachers still showed great commitment and enthusiasm. they saw their self-efficacy fluctuating based on how children responded. Participants said that having parents on board also had a positive impact on their self-efficacy. They too mentioned the 'trust' that leadership showed in them which again propelled their self-efficacy and motivated them. One participant in particular mentioned that, the outstanding element lies with the teacher and not the school.

Collective efficacy: Three participants were interviewed in this school. The participants spoke more about their experiences in their own classrooms with their own students and felt that the efficacy of their teams is high. The senior teacher provided an interesting view regarding the culture. He also mentioned in a different quote that he doesn't believe in outstanding schools but in outstanding teachers.

School 5 – SEN ASD Unit

Self-efficacy: The head of the unit said she felt efficacious but she was also aware that not being in class had an impact on her teaching self-efficacy. Also, she felt efficacious because the school was in a position to give advice to other schools. All participants said the peer observations and sharing expertise had a positive impact on their self-efficacy. There was one participant who didn't think that training added any value. There is some structure from the school and again staff are encouraged to use their initiative. All staff said that challenging behaviour can set their self-efficacy back but talking with their colleagues and teams helps them restore the belief in their capabilities. Experience also had a positive effect

Collective efficacy: In terms of collective efficacy, it was the assistant head teacher who expressed her views on that more than the other two participants. She acknowledged the differences amongst staff in the way they work as well as their personalities but she felt that the beliefs in the capabilities of the team were high.

Appendix 7 - Extract from an interview

Participant: female, phase leader/assistant head, ASD school independent

Do you think self-efficacy affects your teaching?

Oh, an awful lot. If you have the confidence and the belief that you can do something, then I think it is much more likely that you can make happen. Then if you go into a situation, I don't know if you don't feel you can deal with challenging behaviours as easily then you go into a class with more challenging behaviours, if you have that doubt I don't think it will successful. Yeah, definitely has a big impact

Do you think efficacy influences your students' achievement?

Yes, absolutely. The children will pick on these little cues as you whether you feel of how confident you feel when you are teaching them, and the more confident you are I think and the more self belief you've got I think you will be able to more animated, more enthusiastic about what are you doing and that will affect the children's progress

What do school leaders do that affect your efficacy?

Ah, training which is vital because if you are not trained in doing something you can't be expected to have the confidence to be able to go and implement it in the classroom. Ah so definitely training. Here we have several class observations so we can learn where we can improve our teaching and have somebody else watching from the outside to help you pick up in things that you don't pick up otherwise.

Does an outcome of an observation affect your efficacy?

Yes.

In what way?

Eh... because you know you are being observed in advance and you plan it and you want it to be you want to show the children to the best of their ability. You want them to prove they are being good and making progress and you put all that work in and then if the observation goes well then you obviously your self efficacy rises and you feel more able to do your work but if you have put all that effort in and the feedback that you get isn't as good as you want it to be it would affect you and you would think well I have tried my hardest and it is not as good as I thought it was or I am not good as I thought I was.

How do you get back from that?

Erm.. I don't know hahaha...at the end of the observation feedback you get given specific targets to work on and then you will work on these targets you may ask the observer to come back the following week to see the same lesson or session to see whether you implemented those specific things that following week so you can make your targets more focused. Erm and if you got smaller targets and small things to work on then it is easier to tick the boxes and to build your confidence again.

What is it about leaders in outstanding schools? Have you worked in other outstanding schools?

No. this is the only school I worked in.

What do you think is special about working in an Outstanding school in terms of developing your self-efficacy?

I think it is teamwork. I think it is about having a collective understanding of what are the outcomes we expecting the children to be learning to be doing those clear rules, clear boundaries expectations for children and staff. We expect our staff to work on their own professional development, to develop themselves as well as developing the children, because that's clear, everybody understands that.

Does your colleagues' efficacy affect yours?

I think, it affects the teams because we work so closely as teams within the class. If I had a TA with low self-efficacy and I had them working with what activities they can pursue their particular interest they have maybe with art or something so maybe they can go and do the art activities with the children or in team meetings I will ask their opinions about crafts activities for example 'oh next week we are making snowmen, what do you think we should use' to build their confidence.

What about colleagues in the same level as you? Does this affect you when you work with someone who you think they are more confident than you are or less confident in a specific area?

Erm...Yeah, I suppose....it does.... have been here for a long time and it is a bit difficult to go back and think about people in general...I think I know and other phase leaders know that we have different strengths and weaknesses and we know each other's strengths and weaknesses I have been working with some of these people for more than eleven years so so we know those strengths and weaknesses if I had a particular question about teaching a particular child working within National Curriculum levels that I don't feel as efficacious I would go and ask someone whereas they make come and ask me if they have a child working at P4 where I feel much more confident to share ideas and information and I think within the levels here we know each other's strengths and weaknesses.

So it doesn't affect you?

No it doesn't because I know some of these people for a very long time.

You mention you have been here for ten years. Do you think your years of experience have contributed to your efficacy in teaching children with autism?

Erm....greatly...I started as a newly qualified teacher here eleven years ago...Erm I had worked with autism before but I had not worked as a teacher so they had to take that step up and be the leader in a team which.....that is a long time ago...I find it quite difficult especially when I was coming in and I was leading nursery nurses who had many more years' experience than me and also that much older than me and I think age is important as a 23yo young teacher coming in and telling someone who is 45 what to do you kind of have to build this relationship first

Did it affect you when people didn't listen to you? Did you take it personally?

Erm I can't remember I like to say no but I probably did.

What about now? Does it affect you now? Does it affect your efficacy in managing people?

Depending what situation it was, if it was giving someone an idea that I thought they could go and try out and they came back and say I thought about it and I decided that I am not going to try that because we are going to try this instead and gave me reasons for that then I would accept this and I would have the conversation at least for what they thought about it and have come up with their own ideas which is what I want to be doing as a leader but if I was in a class situation working with a teaching assistant and a couple of children as asked the teaching assistant to do something and they wouldn't do it I would then have to talk to them about it afterwards but I don't think it would affect my confidence. If it happened continuously it would affect your confidence but haven't been in that's situation

What about behaviour? How has your efficacy in managing behaviour has shaped through the years and how do you feels about managing difficult behaviours?

Personally I feel quite confident with dealing with challenging behaviour and I have done for many years and I worked in a residential school before here where I was working with young adults up to 24 with challenging behaviour. With self-efficacy and challenging behaviour that depends on day to day personally as to how I am feeling if your are feeling bit more tired bit more stressed.... then when you are faced with challenging behaviour then you are not quite as patient that you should be...does that make sense?

Yes, it does as this would be my next question. Are other factors outside school personal or parents affect your efficacy?

Yes, hugely. Absolutely, hugely. Erm I had a period a couple of years ago that I couldn't come to work. My self-efficacy was so low.

Why was that?

It was personal. Reasons at home. I was diagnosed with depression. I couldn't do any of my job I was off for a significant period of time and when I came back I had to be part time. Erm I had one of my friends who is also a teacher here come to teach with me because the thought of standing in front of a class and teaching was overwhelming so I had to have a colleague with me to support me so I could get my confidence back.

So you found having someone there to support you helpful?

Yes. yes. Erm also at that period coming back to work my phase leader's responsibilities were taken away from me so all I had to do was focus in class and eventually those responsibilities were given back to me bit by bit. So, erm, yes personal factors can have significant impact they can take absolutely everything away! I sit here all confident but my self-efficacy is higher again!

Do you think your self-efficacy fluctuates?

I think it fluctuates all the time but generally stays within certain levels but once it goes to the extreme it takes a lot to build it back up. Then once you get it back up again is moving...It think it depends on even if you are hungry or not (laughs). Need to got to the toilet or something and have no time

Do you think collective efficacy influences progress?

I think it is about the team. As a teacher you need the support and the knowledge that as a team you can do it and then you can do as a teacher what is expected.

What do you think about the collective efficacy in your school? Do you think everybody here feels the same as you?

Yea. I think this is one of the strengths of this school. Everybody here is a team and you know you are a team and everyone supports each other when necessary

As a senior member does it harm your self-efficacy if you have to go and ask for help?

No. personally I don't. again...I think...because I know where I am maybe stronger and I have been challenged in the past and even the teacher says we are going to give you a challenge next year. I see it as learning.

Do lesson observations affect your self-efficacy?

Erm...I am not being observed personally but I think if you observe a brilliant lesson you learn from it. Oh I will try that; I didn't think of that'. And if you observe the lesson and you realise the teacher need support then you will sit down and see what you do but it doesn't affect me personally. I wouldn't observe someone and think oh I am not that good.

Do you think years of experience had an impact on your self-efficacy?

I think so in certain situations. I erm... I don't think you can expect someone to be as confident who has one-year experience compare to ten years experience who is teaching children with autism to have high self efficacy if they don't have much experience. I think the more you teach children with autism the more you are learning and developing and training, strategies you learn. I think experience is important.

You think years accumulate stress? Have you ever reached burnout?

No. only at that period but that was extreme

Appendix 8 - Publications on efficacy of teachers of pupils with autism

Authors	Study design	Participants	Origin	Instruments	Variables measured	Results
Jennett, Harris, & Mesibov (2003)	QUAN	64 autism teachers 34 ABA, 30 TEACCH	US	Autism Treatment Philosophy Questionnaire, Maslach Burnout Inventory, Teacher Efficacy Scale for Special Educators	Commitment, teaching efficacy, burnout	No differences between groups, both had high efficacy and low burnout and high commitment
Ruble, Usher, & McGrew (2011)	QUAN	35 autism teachers	US	Teacher Interpersonal Self-Efficacy Scale, Multifactor Leadership Questionnaire, MBS	Mastery experience, social persuasions, physiological and affective states, self-efficacy	Negative association between scores of teacher self-efficacy (for classroom management) and burnout scores, no linear associations were observed between self-efficacy and years of teaching or administrator support.
Siu and Ho (2011)	QUAN	115 autism teachers	China	The Autism Treatment Philosophy Questionnaire (ATPQ), a modified version of the Teacher Efficacy Scale (TES) for special educators (developed)	Treatment orientations, teacher self-efficacy.	Teachers who identified themselves with the ABA orientation had a significantly higher personal teaching self-efficacy compared to the TEACCH group, as well as the comparison group. No significant difference was found among the three groups in terms of general teaching self-efficacy.
Ruble, Toland, Birdwhistell, McGrew & Usher (2013)	QUAN	44 autism teachers	US	Autism Self-Efficacy Scale for Teachers (ASSET)	self-efficacy, stress, burnout,	ASSET were negatively correlated with scores on two subscale measures of teacher stress but uncorrelated with teacher burnout scores.

Boomgard (2013)	Mixed	15 (SEN teachers, SALTs, paraeducators)	US	Teacher Self-Efficacy Scale (TSES)	self-efficacy, burnout, self-reflection	Statistically significant changes for overall self-efficacy as well as for classroom management, instructional strategies, and student engagement.
Strong (2014)	Mixed	13 teachers	US	Teacher Self-Efficacy Scale (TSES), the Evidence-based Practices Inventory (EBPI), the Field-based Experience Observation Rubric (FBEOR), as well as semi-structured interview	Training, teachers' knowledge about and skill acquisition of evidence-based practice and self-efficacy	Level of feedback gained in field-based observation was a beneficial aspect to the program. According to all participants, the use of evidence-based practices with their students takes some trial and error and overall time to develop implementation skills.
Dinecola and Lemieux (2015)	QUAN	97 graduate social work students who	US	Social Work Self-Efficacy Scale (Adapted from Holden, Meenaghan, Anastas, & Metrey, 2002), Autism Knowledge questionnaire	Graduate social work students' knowledge, self-efficacy, attitudes, interest, formal training, contact with ASD individuals	Self-efficacy in working with individuals with ASDs was positively associated with higher levels of knowledge, class-room instruction, and personal and professional contact. Previous contact and knowledge explained a significant proportion of the variance in student self-efficacy in working with individuals with ASDs

Appendix 9 - Factor Analysis

Item	Questions Self-efficacy	Factors
39	I can administer medication to students with autism who need it if I am asked to and have the proper certifications.	Related duties
41	I can assist students with autism with daily tasks such as toilet use and feeding.	
40	I can effectively transport students with autism from vehicles, desks, and to the toilet without becoming intimidated.	
24	I can de-escalate a situation that is getting out of control when it involves a student with autism.	Classroom management
23	I can effectively deal with disruptive behaviours in the classroom, such as tantrums.	
25	I can remain in control of a situation that involves a major temper tantrum in my classroom.	
2	I can be an effective team member and work collaboratively with other teachers, paraprofessionals, and administrators to help my students with autism reach their goals.	Professionalism
3	I can consult with an intervention specialist or other specialist when I need help, without harming my own morale.	
8	I can give consistent praise for students with autism, regardless of how small or slow the progress is.	
1	I can model positive behaviour for all students with autism.	
31	I can create an environment that is open and welcoming for students with autism in my classroom.	Teacher Support
29	I can effectively encourage all of my students to accept each other in my classroom.	
30	I can establish meaningful relationships with my students with autism.	
32	I can manage a classroom that includes students with autism.	
16	I can adapt the curriculum to help meet the needs of a student with autism in my classroom.	Teaching practices
20	I can adjust my lesson plans to meet the needs of all of my students, regardless of their ability level.	
17	I can adjust the curriculum to meet the needs of higher-achieving students and lower-achieving students simultaneously.	
13	I can break down a skill into its component parts to facilitate learning for students with autism.	
15	I can use a wide variety of strategies for teaching the curriculum to enhance understanding for all of my students	
	Questions Collective efficacy	Factors
1	To what extent can teachers in your school make expectations clear about appropriate student behaviour?	Student discipline
2	To what extent can school personnel in your school establish rules and procedures that facilitate learning?	
5	How well can teachers in your school respond to defiant students?	
6	How much can school personnel in your school do to control disruptive behaviour?	
9	How well can adults in your school get students to follow school rules?	
11	How much can your school do to help students feel safe while they are at school?	
3	How much can teachers in your school do to produce meaningful student learning?	Teaching strategies
4	How much can your school do to get students to believe they can do well in schoolwork?	
7	How much can teachers in your school do to help students master complex content?	
8	How much can teachers in your school do to promote deep understanding of academic concepts?	
10	How much can your school do to foster student creativity?	
12	How much can teachers in your school do to help students think critically?	

