An Investigation into the Physical Education Experiences of Children with Autism.

By

Madison Chapman

Canterbury Christ Church University

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Abstract

Background

The purpose of this study was to investigate the experiences that pupils with autistic spectrum disorders (ASD) face in primary school physical education lessons. According to Stockley (2010) Physical Education (PE) presents a distinctively practical setting that allows pupils to participate in enjoyable, simulating, and challenging physical activities through the guidance of the national curriculum (Department for Education, 2013). An inclusive physical education curriculum would give every student the opportunity to participate in lessons, feel valued and potentially improve their confidence. Although some studies have previously investigated the experiences of pupils with physical disabilities, the perspectives of those with autistic spectrum disorders remain mainly unexplored (Healy et al. 2013).

Methods

Ten pupils with autistic spectrum disorders who attend a combined mainstream and special school participated. The data was collected through face to face semi structured interviews to discover the experiences of the participants during their primary school physical education lessons. An inductive approach was used to provide a thorough account of the data found. After the interviews had been transcribed coding was utilised to identify the emerging themes from the data collected.

Results and conclusion

The participants had both positive and negative experiences during their physical education lessons. Five key themes emerged from the data analysis and coding of this study. The themes consisted of sensory challenges, barriers to participating in PE, demonstrations during PE lessons, team games and bullying and exclusion by peers. The findings are discussed in relation to the research found in the literature review. Limitations of the research conducted and considerations for future research are also included within this thesis. These themes highlight numerous influencing factors that affect the participants experiences which if taken into consideration by PE teachers could improve the experiences within PE lessons for pupils with autistic spectrum disorders.

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This one's for you Gramps

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Chapter 1

Introduction

1.1 Personal Rationale

My experience of physical education (PE) and physical activity has been formative throughout my childhood, through to adolescence and now as an adult. As a child I was always very physically active and involved in a variety of sports including football, swimming, cheerleading and dance. With these I have performed at a high level as well as competing nationally. I continued this interest through to my adolescence where I gained both a GCSE and A-Level in PE which I subsequently took through to undergraduate degree level where I read PE and sport and exercise science. At university I continued to pursue my love for physical activity by joining multiple sports teams and having a lead role within these. As PE and physical activity is such a prominent part of my life, and has always been, I want to be an influencer to the next generation.

Special Educational Needs has also been a fundamental part of my life. During my primary and secondary education, I attended schools that both had special educational needs provisions, therefore I have been surrounded by people with additional needs in education. I have also been involved with a summer playscheme for a decade which provides respite for pupils with varying special educational needs from ages 7-12. During this scheme, we take them on days out which are physically active and develop their social, cognitive, and physical skills, allowing them to take risks in a safe environment. Many of the pupils that attend the scheme are diagnosed with autistic spectrum disorders, all with varying needs, and their engagement with each physical activity has varied between individuals. This has always fascinated and intrigued me as to why this is the case and was a huge influence in my thesis.

1.2 Research Background

Janssen and Leblanc (2010) determine that physical activity has many benefits to pupils, such as gaining healthy bones, muscles, and joints, developing healthy organs, and improving their coordination and strengthening muscle control (2010). PE can be an effective way of motivating pupils to take part in valuable activities (Healy et al. 2013) however pupils with special educational needs could face particular barriers that prevent them from taking part in activities successfully (Huberty et al. 2012). PE presents a distinctively practical setting that allows pupils to participate in enjoyable, stimulating, and challenging physical activities through the guidance of the national curriculum (Stockley, 2010).

Autism is derived from the Greek words ‘aut’ which means self and ‘ism’ which means orientation and it is linked to developmental disorders (Massion, 2006). The National Autistic Society (2018a) have described people with autism to have a different outlook and handle to the world this means that they see, think, and feel differently to others around them, this may mean that they need or experience PE lessons differently. Klar (2006) describes it as a ‘gift’. Autism is a disorder, and it is lifelong with no cure, the autistic spectrum includes people with minimum to no verbal communication right through to those who have an unusual or high intelligence level (Sarris, 2014). Healy and Block (2016) define autism as a neurodevelopmental disorder with impairments and irregularities in growth and development of the brain. The actual cause of autism is still unknown, but it is likely that both genetics and the environment can be influential (Healy and Block, 2016). The National Autistic Society (2018a) estimates that there are around 700,000 people with autistic spectrum disorders in the United Kingdom. A recent study has identified that families with one or more children with autistic spectrum disorders, the chances that a baby sibling will develop with autism are much higher than initially thought. The chance of this happening is thought to be one in five or twenty percent (Georgiades, 2012). Pupils with autistic spectrum disorders are believed to demonstrate three main characteristics, these are communication difficulties, socialisation difficulties and difficulties with change (Lamb et al. 2016). PE and sport includes all three of these elements and therefore may be a difficult experience for pupils with autism. The National Autistic Society (2016) understand that pupils on the autistic spectrum can have both under sensitive and over sensitive stimuluses that affect the five senses (sight, sound, smell, taste, and touch) and these can have an effect on behaviour.

Healy et al. (2013) affirms that pupils with autistic spectrum disorders are an assorted group that have a vast range of PE experiences. A pupil with autism may exhibit motor skills, fitness performance, involvement behaviours and intelligence functions that are below the expected targets for their age range (Auxter et al. 2005). There is research in experiences of physical activity and pupils with autism, however this mainly focuses on the experiences of pupils in a mainstream school and special schools at secondary level (Lewis and Humphrey, 2008), but not a combination of pupils in both types of school at primary level. This intrigued me to research further due to my experience with pupils with autistic spectrum disorders at primary school level in PE.

1.3 Research aim

The following research aim was established from taking the researcher's experience in the field of PE and pupils with autism, and the gap in research of the experiences of primary school aged pupils in PE.

The aim of the research was to investigate the Physical Education Experiences of Pupils with Autism. The research questions that were focussed on in the investigation were:

1. Do pupils with autism experience barriers to learning in physical education?
2. Do pupils with autism experience sensory challenges within physical education lessons?
3. Do pupils with autism experience victimisation within physical education lessons?
4. What prompts do pupils receive within physical education lessons?

These research questions were compiled so the researcher would gain an understanding of a variety of experiences of pupils with autism within physical education.

1.4 Participant and environment

An inductive approach was taken to produce concepts and ideas from the research in order to compile a range of findings (Young and Atkinson, 2012), exploring the research questions that were derived. The participants were a group of primary aged pupils with autistic spectrum disorders aged between eight and eleven years old. They attend a mainstream school with a special educational needs school attached. Within the school they use Picture exchange communication systems (PECs) to support pupils and allow for inclusive access to the curriculum (National Autistic Society, 2015). Picture exchange communication systems was originally designed with the intention of aiding non-verbal children with autism but is now used by many children and adults with a variety of cognitive, communication and physical challenges (Howlin et al, 2007). There were 10 participants consisting of eight boys and two girls that were interviewed during their regular PE lesson slot. The researcher felt that the opinions of the pupils would generate a variety of experiences within the PE lesson (more information on the participant and the setting of the research can be found in the Research Methodology Section in Chapter 3). There are many scholars and research articles that consider the social model rather than the medical model of inclusion to be the foundation of educational practice. The social model of disability holds that people with impairments are 'disabled' by the barriers operating in society that exclude and discriminate against them (Oliver, 2013). Whereas the medical model of disability, according to Olkin (1999) looks at a person's impairments first and

focusses on the impairment being the cause of a disabled person being unable to access activities and participate fully in society. Disability studies that are influenced by the social model of disability can potentially highlight the current understandings and provoke new ways of imagining physical education programs (Titchkosky & Michalko, 2009).

Chapter 2

Literature Review

2.1 Introduction

This literature review chapter will summarise, analyse, critique, and evaluate the experiences of PE for pupils with autism. This chapter will begin by discussing disability and sport, which will then lead on to autism and PE and finish with the benefits and barriers of PE for pupils with autistic spectrum disorders. These areas have been examined and are important to the research to give a broader perspective of PE, physical activity, and sports for pupils with disabilities as well as magnifying aspects of autism. Within the literature review, research will be used from both the United Kingdom and the United States of America. The researcher understands that the approaches adopted by both nations have differences, however there are many similarities which supports the socially inclusive PE within the UK. It is acknowledged that many authors within their literature refer to participants within their studies as children, for the purpose of consistency of terms this thesis will use 'pupil' or 'pupils'.

2.2 Disability and Sport

The Children and Families Act (2014) express that "A pupil or young person has special educational needs if he or she has a learning difficulty or disability which calls for special educational provision to be made for him or her" (p.61). The National Autistic Society (2018a) express that autism is a lifelong developmental disability, therefore, a pupil with autism is regarded as disabled giving to this description. Fitzgerald (2006) has revealed that historically disability has been understood in many different ways. The disability under the Equality Act (2010) proclaim that you are disabled if you have a physical or mental impairment that has a substantial or long-term negative effect on your ability to carry out normal day to day tasks. The way disability is defined is important because the language society uses to describe individuals with disabilities influence expectations of them and the way people are willing to interact with people who have disabilities (Barton, 2009). One of the most influential results of the London 2012 Olympic and Paralympic Games was the transformation in communal awareness of people with disabilities. The remarkable accomplishments of athletes such as Ellie Simmonds, Sarah Storey and David Weir placed the emphasis directly on ability rather than disability (Shields, 2014) and potentially the expectation for pupils to be able to succeed in sport despite their disability. Somerville (2018) voice that Great Britain's performances from Rio and Pyeongchang were seen as positive for the sustained progress and expansion of Paralympic sport in Britain. From the depiction of disability sport through the broadcasting of the Paralympic games, negative barriers, and opinions of people with disabilities are being broken down every day. However, Ashley (2016) highlighted that from London 2012 the Paralympian's were labelled as 'heroes' but now they are

facing funding cuts towards their training, equipment and travel. This is due to having poor economics in the years following the London 2012 Paralympics.

There are organisations and initiatives aimed at providing activity for pupils who have additional learning needs such as the English Federation of Disability Sport, the Youth Sport Trust and Sport England (Stidder and Hayes, 2013). The Youth Sport Trust has provided training to teachers, parents, and policy holders by giving them professional development modules to complete that give them methods to support young people in PE and sport (The Youth Sport Trust, 2018). Through research Sport England (2016) designed stimulus materials such as posters and flyers in order to engage more people with disabilities to participate in sports and physical activity. These stimuli were also designed in the form of website header formats, radio adverts and SMS texts. The English Federation of Disability Sport provide advice and guidance on sports for people with disabilities as well as influencing and supporting providing partners across the delivery of sport and aiding it in being more inclusive and as a provider for a greater range and quality of opportunities (English Federation of Disability Sport, 2017).

Smith and Thomas (2005) maintain that the inclusion of young people with disabilities within mainstream PE has been the front of international policies and programming for many years. Block and Obrusnikova (2016) understand that PE teachers are critical to the success of inclusion in general PE lessons in primary school PE in England. Block and Obrusnikova (2016) carried out a study to identify the teacher and student variables within teaching PE. The study reported that patience along with high quality training and support were important in enabling a teacher's behaviour management and teaching efficacy.

Block (2007) certify PE is a standard for guiding pupils in the process of living a physically active life, PE programmes also promote knowledge, positive social interactions, and skills acquisition. Sainsbury (2002) maintains that pupils with autistic spectrum disorders have difficulty reading social situations and understanding how to engage in them. National legislation requires schools to provide pupils with special educational needs and disabilities to take part in PE and physical activity (Hodge et al. 2012). This links to the National Curriculum for PE as the main aims of the curriculum are to develop competence which can link to skill acquisition, to be physically active for sustained periods and to lead healthy and active lives which links to Block's (2007) statement of guiding pupils to live physically active lives.

2.3 PE vs Sport

PE and sport have a large amount in common, but it is often proposed that there remain significant differences (Bailey, 2007). It is valuable to clarify the terms that are currently being used. The Association for Physical

Education (2015) explain that PE is the strategic and progressive learning that happens in a timetabled format within the school curriculum that is delivered to all pupils, this aims for pupils to become more physically competent. Sport is the learning that happens without the guidance of the national curriculum. The context for learning is to become physically active however it is an athletic activity that requires a specific skill or a physical ability that is often linked with a competitive quality (Association For Physical Education, 2015). It is apparent that there is a close relationship between PE and sport, but they are not the same. Bailey (2007) indicates that at most the difference between the two areas is simply that sport represents a variety of activities and PE refers to an area of the schooling curriculum that focuses on physical activities and the development of physical competence. Although there are differences between both PE and sport, there are many positive aspects that come through participating in both processes. Positive aspects such as developing respect for one's body, enhancing self-confidence and self-esteem, opportunities to meet and communicate with others as well as developing social skills to name a few (Talbot, 1996).

2.4 Inclusive physical education for pupils with Special Educational Needs and Disabilities

Within PE Block (2007) defined inclusion as both a social and educational practice that supports the place of pupils, whatever their ability or disability in lessons with their classmates with appropriate supports and adjustments. A review was conducted by Qi and Ha (2012) in order to examine research on inclusion in PE from twenty years of literature on inclusive PE, which enabled them to present guidance for possible research in the future. The main themes identified from this review were stakeholder perspectives, effective practices for inclusion and the impacts inclusion can have on pupils with disabilities and those without. The research found that a total of fourteen studies concentrated on the effect of inclusion for both pupils with and without disabilities. Qi and Ha (2012) believe that systematic reviews demonstrate that inclusive PE benefits both pupils with and without disabilities. This is because it is understood that inclusion in PE does not affect the learning outcome when given support or when a compact curriculum is used, support such as using specialists within adapted PE and paraprofessionals. The results also suggest that even though pupils with disabilities can gain from social exchanges within PE, social segregation is still in existence (Qi and Ha, 2012). Hodge et al. (2012) promotes inclusion for giving chances to learn and practice social skills in ordinary surroundings, learning behaviour that is suitable in society, interaction between pupils with disabilities and typically developing pupils and allowing them to be role models and developing relationships. Penney (2002) recognises that the revision of the national curriculum in 1999 brought new discussions to the forefront of the documents, specifically those of inclusion in

both education and PE. This is because it produced a detailed and overarching statement on inclusion that made clear the principles that schools must follow in their teaching across the curriculum (Department for Education, 1999). Smith and Thomas (2005) understand the long-term process of including pupils with special educational needs and disabilities in mainstream education settings has increased extremely quickly in the last few years. By using these strategies, teachers are required to use different methods of differentiation that all pupils are able to access, including those with special educational needs and disabilities. Strategies such as placing acceptable learning challenges, responding to pupils varying learning needs and overcoming obstacles to learning and assessments (Smith and Thomas, 2005). Penney (2002) understands that this should be the case regardless of how challenging or varied the pupils individual needs are. Even though research has investigated teachers considerations of inclusion, the means in which they notify teacher's training were still in their early stages according to Penney (2002). Although research conducted by Fitzgerald et al. (2003) highlighted that it is not unusual for pupils with special educational needs to leave an activity such as team games or competitive sports as they were unable to add themselves into what was being taught, for example not having the social skills. Penney (2002) and Morely et al. (2005) considered activities such as swimming, gymnastics, dance, and badminton to be appropriate for pupils with special educational needs. From Fitzgerald et al.'s (2003) interviews some of the pupils proposed that they were less involved in PE when team games were being taught. Maher (2010) suggests that from Fitzgerald et al.'s (2003) research an unintended consequence of the national curriculum for PE is that many pupils with special educational needs are participating in a restricted PE curriculum because of government objectives such as engaging in competitive activities and team games (Department for Education, 2013). This has disregarded those individual activities (such as: swimming, dance, and gymnastics) that are inclusive by design and are less likely to need adjustments to suit pupils with special educational needs (Meek, 1991). Coates and Vickerman (2008) found a range of strategies for differentiating PE for pupils with special educational needs and disabilities to ensure all pupils have positive experiences and suggested that there are three themes that were prominent in inclusive delivery of PE. These themes are adapting the curriculum (changing what is taught), modifications to the delivery (changing how the curriculum is taught) and the use of human resources (changing who teaches and the supports of adapted PE). Bailey's (2007) model also gives support for the planning of PE, they use presentation, content, and organisation. The presentation focuses on the teaching style used, teaching games for understanding allows the pupils to make their own choices and a divergent approach inspires the pupils to generate multiple solutions to solve a problem. The content is suggested to be differentiated by task and by pace, differentiation by task is to enable pupils to engage with the lesson and differentiation by pace is

recommended as some pupils may finish the task quickly so giving them a more difficult task may take more time to complete. This is important for pupils with special educational needs because they develop at their own pace and prefer to play by their own rules (The Education Act, 1996). Bailey (2007) suggest the organisation is done by ability of the group and by the space. Ability groups should be different for each activity as a pupil may be fully competent at one but not at another, increasing or decreasing the space being used could also make the learning outcomes harder or simpler for the pupils (Bailey, 2007).

2.5 The National Curriculum and Special Educational Needs and Disabilities

As PE is a compulsory element of the national curriculum through all of the key stages, every pupil should have the same access to PE and having a disability should not be a barrier to inclusion (Shields, 2014). The Department for Education (2013) states that a high quality PE curriculum stimulates all pupils to thrive and excel in competitive sport and other physically challenging activities. The national curriculum (Department for Education, 2013) has an inclusion statement that is designed to enable a more inclusive environment for teaching and learning to take place. The statement underlines three principles that are essential to developing a more inclusive curriculum. These principles are setting appropriate learning challenges, responding to pupils various learning needs, and overcoming possible obstructions to learning the assessment for individuals and groups of pupils (Department for Education, 2014). The Department for Education and the Department of Health (2015) released a statutory guidance for organisations that work with and support pupils and adults with special educational needs and disabilities aged 0-25. The SEN code of practice provided practical advice to local education authorities, schools and early education settings that assess and make provisions for pupils with special educational needs (The Education Act, 1996). Whereas the statutory guidance is for head teachers, governing bodies, staff, SEN coordinators, health and social staff and the local authorities to provide explanations of guidelines that schools must follow (Department for Education, 2014). The statutory guidance encourages that schools who support a wide range of special educational needs and disability pupils should regularly review and evaluate the breadth and impact of the support they specifically offer and what else is available to them. The 2015 code of practice has a stronger focus on the high ambitions of pupils and young people and on improving their outcomes. The Department for Education's code of practice (2015) also suggest that schools should collaborate with other education providers locally to investigate how to meet different needs most efficiently. The Department for Education's Equality act (2010) necessitates that all education providers have responsibilities towards individual

disabled children and young people. They are required to make realistic changes which include the delivery of supporting aids and services for disabled children, this is in order to prevent them from being put at a considerable disadvantage. These responsibilities are required to be given thought in advance to what children and young people may need and what alterations need to be made in order to prevent them being at a disadvantage (Department for Education, 2010). The Department for Education's code of practice (2015) insists that "all pupils should have access to a broad and balanced curriculum" (p94). The National Curriculum inclusion statement deepens this and affirms that regardless of their previous ability levels, high expectations should be determined for every pupil. Appropriate assessments are required for teachers to be able to set deliberate ambitious targets, these will enable them to bring to light any potential areas of complexity. Discovering difficulties will give teachers the opportunity to plan and concentrate on them from the beginning which in turn should remove possible barriers to pupils attainment. This could also result in pupils with SEN and disabilities being able to learn from the full national curriculum (Department for Education, 2015).

The primary national curriculum for PE (Department for Education revised in, 2013) suggests that teachers should set stimulating but reachable targets that have an understanding of contexts to be able to facilitate access to the curriculum for pupils with special educational needs and disabilities (Department for Education, 2013). The Department for Education (2013) also specifies that special educational provisions should be matched to the pupils specific special educational needs. A pupils special educational needs are categorised into four areas; communication and interaction (speech, language and communication needs), cognition and learning (support for pupils who learn at a slower pace including moderate learning difficulties (MLD) and severe learning difficulties (SLD) where pupils require support in all areas), social, emotional and mental health (these can include pupils who experience a wide range of social and emotional difficulties which could result in disruptive and disturbing behaviour) and finally sensory and/or physical needs (some pupils require a special educational provision because they have a disability that inhibits them from utilising educational facilities) (Department for Education, 2015). Pupils with autism can fit into all four of these areas, as they struggle can with sensory sensitivities, limited social skills, highly skilled learning abilities or severe learning difficulties (Autism Speaks, 2019). The PE primary national curriculum insists that 'lessons should be planned to ensure that there are no barriers to every pupil achieving' (Department for Education, 2013).

In order to properly focus on the needs of pupils with special educational needs and disabilities, Farrell (1998) mentions that a teacher should be prepared to move past appreciation for inclusion and be ready to reconsider their structure, teaching methods and their use of support. Teachers are therefore expected to act within their

school contexts and modify methods to enable full entitlement to the curriculum for pupils with special educational needs and disabilities (Vickerman and Maher, 2019). Therefore, it is important to examine the current experiences of pupils with autism within PE to see if these suggested methods are being applied.

2.6 Inclusion Spectrum

The inclusion spectrum is an activity focused method to the involvement of pupils who have different abilities in PE as inclusion can be attained by altering the setting of the activity, or the way in which the activity is presented (Healy and Block, 2016). Stevenson (2009) identifies pupils with autistic spectrum disorders may have difficulties that effect their capability to be successful in PE, the inclusion spectrum could be harnessed as a teaching tool to structure the content in a way that provides for a variety of learning abilities. The inclusion spectrum was adapted by Black and Haskins (1996) for PE, they proposed the methodology in addressing student's individual needs in PE (Bailey, 2001), individual needs such as sensitivities to noise, the environment or light. The inclusion spectrum was first made up of mainstream activities, modified activities, parallel activities, adapted activities and separate activities. These approaches were designed to be used in different ways such as adopting each approach individually, being used as the main theme of the lesson, using two or more of the approaches as part of a mixed ability lesson or using each section to progress each group (Bailey, 2001). The inclusion spectrum was then built upon Winnick and Porretta's (2011) notion of flexible teaching and learning strategies (for example changing the lesson on the spot to meet the needs of the pupils or changing the number of pupils in a group) and the Youth Sports Trust and English Federation of Disability Sport have extended it (Vickerman and Maher, 2019). The inclusion spectrum offers a variety of strategies that teachers can use in their lessons in order to achieve the maximum participation and access to physical activity for pupils with special educational needs and disabilities (Block, 2016). The inclusion spectrum now consists of five activity stages; open activities, modified activities (such as skipping with a rope: some can do the full circular motion, others may choose to jump over it on the floor or swinging low, some may also need hand support while jumping), parallel activities, separate activities, and disability sport activities. These stages all depend on a pupils social, physical, and cognitive abilities and they can be useful for pupils on the autistic spectrum. The open activities are used without making changes to the lesson as the activity is flexible and individual barriers do not have an influence, for example travelling in dance the aim is just to move. The modified activities are employed to allow successful participation, changes can be made through the STEP process (Space, Task, Equipment and People) (Williams and Cliffe, 2011, table 1).

Space – adapting the area to enable easier completion of a task.	• Games: increasing the area to allow pupils longer reaction times and decreasing space to increase quick thinking and movement • Standing closer or further apart when working in pairs • Make different working pathways • Expand or reduce target areas
Task – changing or giving a new task to simplify it or make it harder	• Balancing on larger or smaller body parts • Dribbling around cones or in a straight line • Introducing new rules and roles
Equipment – changing the equipment can increase or decrease difficulty of an activity.	• Use slower moving objects to catch • Change size or heaviness of a racket • Using bean bags as opposed to balls • Armbands or floats in swimming lessons
People – the larger the group number the more challenging an activity becomes	• Games as individuals, in pairs or teams • Playing 3v2 games rather than 3v1 • Increasing the number of people in a dance routine (Howells et al. 2018)

Table 1- STEP process

Parallel activities (such as a game of tag in a mainstream school or a game of superhero tag in a specialised school) are used when there are mixed abilities in the class for example grouping similar abilities can allow for everyone to be successful but in their own time. The separate activities can enable pupils to work as an individual on different skills and disability sports activities can benefit all pupils as it allows for a reversed curriculum for both special educational needs and typically developing pupils to participate in when it is adapted for special needs lessons (Healy and Block, 2016).

Wright and Sugden (1999) express that teaching pupils with special educational needs is an extension of a good approach. An effective PE teacher ensures a distinguished method to directions and ability level within the objectives of the lesson. Bailey and Robertson (2000) believe that special educational needs in PE should be arranged within the notion of movement. Sugden and Wright (1996) make a distinction between pupils that have special needs in two categories: primary needs and secondary needs. Primary needs are described by their movement ability and those who have special needs in PE which are secondary to their other needs. Primary needs include pupils with cerebral palsy or muscular dystrophy as well as pupils with more wide-ranging movement complexities. With the movement difficulties that come with these needs make PE harder to participant in. Secondary needs could be considered as learning difficulties, attention deficit and hyperactivity disorder (ADHD) and autistic spectrum disorders (Sugden and Wright, 1996). Bailey (2001) expresses that it is vital to understand that these categories are not strict and not every pupil that has special needs or disabilities will have special needs

in PE. These needs could also make PE difficult but in a way that the pupils cannot keep concentration rather than not being able to access the lesson due to movement restrictions.

The Department for Education declare that in January 2018 it was recorded that 1.276.215 pupils in England had special educational needs and 28.2% of those have autistic spectrum disorders. Autistic spectrum disorders remains (from 2017 to 2018) the most common primary type of need for pupils that have been statemented or have an Educational Health and Social Care (EHC) plan (Department for Education, 2018). Therefore, it should be a simple area for teachers to support due to its prevalence.

2.7 What is autism?

The National Autistic Society (2018a) defines autism as a lifetime developmental disability that effects how a person communicates and interacts with the world around them. Schmidt et al. (1986) divulges autistic spectrum disorders to concern a group of intricate neurodevelopment disorders categorised by repetitive and characteristic patterns of behaviour and complications with social communication and interaction. Autism is a complex disorder because every pupil has different yet specific needs, the indicators of autistic spectrum disorders vary significantly depending on the pupil, and the range of needs is constantly changing (Jonas-Ohrberg, 2013). They can change as the person with autism ages as they could develop heightened emotional difficulties or behavioural changes (National Institute of Neurological Disorders and Stroke, 2019). The National Autistic Society (2020) use a manual (Diagnostic and Statistical Manual of Mental Disorders, fifth edition, DSM-5) to define autism spectrum disorder as "persistent difficulties with social communication and social interaction" and "restricted and repetitive patterns of behaviours, activities and interests" present from early childhood to the extent that they limit and impair everyday function (National Autistic Society, 2020). The fifth edition diagnostic criteria is thought to be much clearer and simpler than any previous edition and also includes sensory behaviours. The National Autistic Society (2020) insist that this is useful as many people with autism have sensory differences that affect them in every-day life, it also includes indicators that can specify whether provision needs, and other aspects can have an influence on the diagnosis. The terminologies 'autistic disorder', 'Asperger disorder', 'childhood disintegrative disorder' and 'Pervasive Developmental Disorder (PDD)' have been replaced with a comprehensive term 'autistic spectrum disorder' within the DSM-5. This means that it is likely that the term 'autistic spectrum disorder' could become the most frequently given diagnosis. More specific areas such as intellectual impairment, language impairment, genetic conditions and behavioural disorders have been introduced to the DSM-5 to enable clinicians to describe associated or related conditions (National Autistic Society, 2020). One of the specifics of the DSM-5

relates to the severity of a person's social interaction impairments and limited, repetitive forms of their behaviour. There are three levels of the DSM-5: requiring support, requiring substantial support, and requiring very substantial support. These levels can allow for professionals to produce an indication of how much a person's condition influences their day-to-day life and how much support they may need, although obtaining a diagnosis does not always mean the person is necessarily eligible for support. Requiring support (level 1) a person has noticeable issues with their communication and socialising skills along with a decrease in interest in social interactions, has difficulty initiating social interaction and adapting to their routine or behaviour changing. The level 1 classification of autism illustrates that a high quality of life can still be maintained within little support. Requiring substantial support (level 2) require more considerable support, a person at this level has a harsher absence of both verbal and non-verbal communication skills which makes daily activities difficult. They struggle with difficulty in routines and environments changing, have constricted or very precise interests and have a condensed response to social cues or interactions. Those with a level 2 classification generally require more support. Requiring very substantial support (level 3) is the level with the most complex needs, according to the DSM-5 those who require very substantial support need very significant assistance. Level 3 have an absence of communication skills, and they present very recurring or limiting behaviours. This level has an extremely noticeable deficiency of both verbal and nonverbal communication skills, great difficulty managing with unforeseen changes and a great deal of distress when altering focus and attention. The classification of level 3 autism often means that individuals may need intense therapy and can potentially benefit from taking medication (National Autistic Society, 2020).

Kenny et al (2015) expresses that there have been public discussions that propose there are disagreements about the way that autism is and how it is best described. A study was undertaken to identify the favoured terms to describe autism. The results deemed that the use of 'autism' and 'on the autism spectrum' were permitted by a large amount of those asked in the survey. 'Autistic' was recommended by family members, parents, and autistic adults but not by professionals however 'person with autism' was validated by professionals but not by parents or autistic adults (Kenny et al, 2015). Overall, the results advise that there is not one single way to describe autism that is accepted universally (Kenny et al, 2015) and it is best to ask someone how they would prefer to describe themselves, their preference should take precedence over the recommendations (Robison, 2013; National Autistic Society, 2018b).

2.8 PE and autism

Howells (2012) defines PE as a place within the national curriculum where opinions and habits can be adopted and a consideration of physical activity, healthy lifestyle and diet can become a collective and progressed within the pupils. PE offers a noticeably practical setting that allows pupils to take part in entertaining, motivating, and challenging physical activities through the national curriculum. This is important because it allows for pupils to succeed and excel in physically demanding activities (Department for Education, 2013). The Department for Education (2013) states that an excellent PE programme motivates all pupils to thrive and succeed in competitive sport and other substantially challenging activities. It should deliver chances for pupils to become physically confident in a way which reinforces their health and fitness. PE also aids pupils to progress their personal and social skills, pupils can learn to work both in teams and singly (Stockley, 2010). Teaching PE to pupils with autism can be a challenge. They highlight that communication and social interaction are big factors, repetitive behaviours such as rocking, and flapping make their learning difficult. Keeping the pupils attention can often be difficult and a sensory overload could also trigger a loss of all progression and concentration in that lesson.

Devine (2018) believe that many pupils who are on the autistic spectrum can be supported and can be part of a mainstream school whereas others will have a more inclusive involvement and be in a more dedicated setting. The Department for Education (2013) highlights that with the correct teaching that recognises a pupils individual needs many disabled pupils may have small need for extra resources (such as bigger/smaller equipment) past the aids that they use as part of their everyday life. Whether it is a mainstream or more specialist setting the educational provision for autistic pupils needs to be suitably resourced. All mainstream schools are expected to teach pupils on the autism spectrum and have the consideration, sources, grounding, and specialist support to meet the pupils needs. Inclusive PE is an educational setting where all pupils, including those with autism, are acknowledged and educated (Kelly, 1994). The main goal of inclusive PE is to engage every pupil and meet their individual needs in a helpful environment (low noise, non-rushed environment or dimmed lights) (Block, 2000). The primary national curriculum (Department for Education, 2013) still agrees with this, the aims are to set high expectations for every pupil and plan work that stretches every pupil and lessons should be planned to ensure that there are no barriers to every pupil achieving. To be able to engage every pupil in PE the teacher needs to have a positive attitude toward teaching pupils with autistic spectrum disorders and modify (through the skill, activity, or game) the PE curriculum to make it inclusive and accessible for all pupils (Sherrill, 2004).

2.9 Sensory Overload

Braaten (2016) expresses that for individuals with autistic spectrum disorders sensory overload is a very common characteristic. It occurs when something around overstimulates one or more of a person's senses at the same time and there is too much information coming through for the brain to process. Rudy (2019a) understands that people with autistic spectrum disorders are often highly sensitive to their environment and usually have vulnerable sensory systems although Lamb et al. (2016) reveal that the environment does not always encourage stress. This means that their sight, hearing, touch, smell, and taste can all be easily overloaded. Some general challenges that could affect people with autistic spectrum disorders negatively could be a bright light that flickers or makes a noise, the smell of cleaning products, perfumes, or profound odours, moving curtains, posters or other wall art, constant sounds such as lawn mowers and a clock ticking or food and materials that have specific textures. These can all effect people differently (Rudy, 2019a). So consequently, the physical environment of a school hall may impact the pupils experiences of PE.

2.10 Team games and autism

Rudy (2019b) explains that some sports such as team games can be tough for pupils with autism as having autism can create some significant challenges when sports are involved. Cooperative team sports in PE such as football, basketball and hockey may be particularly difficult for a pupil on the spectrum as team games require a high level of communication, this is something that some people with autism lack due to the disorders (Rudy, 2019b). Holecko (2019) adds to this and understands that team sports with a ball require a high level of strength and coordination, autism is often linked to features of low muscle tone and difficulties with coordination. Another aspect of team sports is the environment, it could be hot, cold, noisy, or bright and many pupils on the autistic spectrum struggle with sensory challenges that make situations difficult to deal with (Holecko, 2019). Gillies et al. (2013) understand that in order to decrease the sensory challenges, PE teachers could prepare before the lesson and use consistent classroom routines which could aid in decreasing pupils anxiety which can affect behaviour through such things as social stories through visual mechanisms recommended for pupils with ADHD but could be used for pupils with autism (Howells and Barton, 2012). Sports in PE that may be better suited to pupils with autism are swimming and running. Holecko (2019) outlines that the water when pupils are swimming, provides a soothing sensory input and pupils can compete as an individual whilst also still being part of a team. Running is similar as it is team based as it can be done as part of a team but individually completed, this could be a useful

activity for pupils with autism as there is often very little communication that is needed between the team (Rudy, 2019b).

2.11 Teaching Physical education in Primary School

To be able to meet the needs of autistic spectrum pupils, a lot of effort is required from the teacher because the PE environment is different from any other schooling environment. For example, the space where PE lessons take place is bigger, there are more pupils participating and more equipment is needed to carry out the PE lesson. Both the teaching environment and planned activities need to be carefully organised by the physical educator to allow the pupils on the autistic spectrum to be safe, productive, and tested without being over stimulated too (Menear & Smith, 2008).

Although PE is a core subject in the national curriculum it is often not prioritised due to fact many parents and/or carers have had bad experiences as a pupil (being picked last or exercise being used as a punishment). The 2013 Ofsted report concluded that PE was being given inadequate time to allow all pupils to achieve well and meet the requirements of the national curriculum for PE. Ofsted (2013) highlighted that PE was good in some school however in others the pupils were stopped from doing long periods of exercise as the teachers interrupted their learning (Ofsted, 2013). These experiences make the parents/carers reluctant to push their pupil into participating in PE through not promoting PE in a good way and not promoting their pupils to take kit (Autism Parenting Magazine, 2018). Pupils learn the ins and outs of different sports, but these common loud and busy classes make it difficult for pupils with sensory and social problems to learn and concentrate (Sarris, 2014). Teaching PE to pupils with autism can be a challenge.

2.12 Strategies to Support

Davis and Dillon (2010) gave suggestions for pupils on the autistic spectrum within PE. The recommendations include using a one-to-one if necessary (this gives the pupil additional help) or if the pupil requires extra supervision, using a Picture Exchange Communication System (PECS) booklet so all pupils who are non-verbal can make a choice on the activities they do, and how the equipment is modified (such as using larger or smaller balls, a tee to hold a ball or making targets larger) to allow all pupils to access lessons. It can also allow pupils to be successful and use specific sensory equipment such as bell balls and textured balls as this often helps as it

offers the certain sensory input that many pupils with autism crave (National Autistic Society, 2015). Priory Education and Children's Services (2018) understand that through research it has been exposed that mainstream schools are frequently neither fully educated nor equipped to deal with the needs of an autistic pupil and give them the necessary one to one support. However, in England, there are over 320,000 pupils that have an Education, Health and Care Plan (EHCP) which permits them to special educational needs (SEN) provisions at school although not all schools accept the SEN provision and allow the pupil to go through school unsupported (Knight, 2018). Having a lack of one to one support may limit the experience a pupil has in PE.

Bryan and Gast (2000) understand pupils with autistic spectrum disorders are often visual learners and are able to utilise information more efficiently if it exhibited in a way that they can see rather than hear. An instructional approach that uses visual aids capitalises on the pupil's strengths in managing information, where as it can lessen the pupil's struggle in processing information through other formats (Simpson, 2005). Silas (2018) understands that the PECS system is an advantage to pupils as it evidently intended and freely understood as when the pupil hands an adult a picture or sentence strip, it can be formed quickly, and the pupil is given an effective way to meet their needs. Another advantage is that pupils using PECS have an unlimited amount of communication partners if they are willing to communicate through PECS (Silas, 2018). Whereas Gagnon (2010) believes the disadvantages of PECS to be the cost, non-verbal delay, and limitations to the user. For PECS to be used effectively teachers and parents need to be trained in the phases of implementation which could result in high costs. The PECS system may also worry parents which leads them to believe that their pupils non-verbal use of PECS could delay their pupils speech further. Gagnon (2010) also declare, the PECS system could be limiting as the pupil could become more advanced than the PECS communication system abilities. Andrews (2018) agrees that the PE teacher can aid the learning of pupils with autistic spectrum disorder through; providing visual supports in the lesson but also creating and giving a visual timetable for the lesson and liaising with parents as they could have useful strategies for compliance and calming the pupil down if they are to have a sensory overload. Kamlesh (2011) also underline that using systematic desensitisation and cognitive strategies could be methods of managing fears and anxieties (found in previous research such as Healy et al. 2013) in the PE environment for pupils with autistic spectrum disorders, in this research fears and anxieties will also be explored. Jandhyala (2017) recognises that visual aids help learners to gain ideas easily by inspiring the imagination and through effecting the learner's intellectual capability. Ipatenco (2007) believes that visuals build student interest and engagement within a lesson and could also expand the scope of what can be learned in PE.

Barber (2010) gives a multiple of suggestions that if used could make PE inclusive for all. These suggestions are; presuming competence – realistic goals should be set after the teacher has observed the pupil within PE and the teacher should not assume that the pupil is incompetent or uninterested in participating; giving visual cues – giving a visual schedule to the pupils allows an introduction to the activities, giving brief instructions – keeping the instructions short and giving a simple demonstration allows for the pupils to attempt to imitate the action, varying tasks – using the same movement across activities, addressing sensory challenges – for this calming supports could be used such as stress balls or something the pupil already uses to avoid any sensory overloads and using rewards – if the pupil or pupils being taught have specific interests these could be used as small rewards for activity engagement. Hence, enhancing the experiences of PE.

Jones and Block (2006) similarly to Kamlesh (2011) identify certain strategies to teaching pupils PE. They mention that every pupil with autism will establish unique strengths and weaknesses, so the suggestions they make are very broad and may not be suitable for all. Jones and Block (2006) recommend having a physical layout that provides visual cues, having a routine that is the same in the lead up to every PE lesson, having a clear end to the lesson and using simple verbal directions at all times.

Another way of enabling successful participation within PE, would be for teachers to construct their activity space so that the environment is predictable for the pupils with autistic spectrum disorder as the atmosphere in an unknown environment could cause a sensory overload, as having a predictable environment gives structure and enables pupils with autism to make sense of the world (National Autistic Society, 2017). Winnick and Porretta (2017) understand that the teacher will need to classify and make obvious all aspects of the PE lesson for the autistic pupils. They will need to identify where the lesson will take place – in the sports hall or on the field, where the equipment is located – labelled ball bins, labelled cupboard or shelf and they are how the pupils need to move from space to space – rotating stations or going from outside to inside or vice versa. The teacher will also need to point out and put in place restrictions for the lesson for example if they must stay on one side of the field or one half of the sports hall, cones that indicate this space should be visible to the pupils.

The possible benefits of PE are common for all pupils. However, enabling these benefits in pupils with autistic spectrum disorder involves a lot of careful preparation, although every pupil with autism is different so what could be helpful to one pupil may have an opposite effect for another (Lamb et al. 2016). The Autism Parenting Magazine (2018) suggests points to consider when supporting a pupil with autistic spectrum disorders in PE. They suggest making games with lots of movement but having low point systems or no point system at all, so the pupils

just play the game and without there being an actual winner or a loser of the game (in order for the pupils to learn to cope with their emotions), the autism parenting magazine also recommend that playing games that use more cooperation than competition with movement being the main goal, this is important because it allows for the pupil to be independent and gain success (Healy et al. 2018). An American teacher (Mr Wagner) has specified that he breaks down the difficult motor skills into smaller activities and teaches the pupils step by step. He also allows for the rules of the games to be adapted to accommodate for pupils who forget them easily (Wright and Wright. 2010).

2.13 FeelGood Curriculum

There are many ways of making PE accessible for all however Stockley (2010) created a 'FeelGood' PE curriculum that was accessible to pupils with autistic spectrum disorder, which would take all of the specific needs of autistic spectrum pupils. The adapted curriculum followed the guidelines of the national curriculum (which are to progress competence to excel in a variety of activities, ensure all pupils are physically active for continuous periods of time, engage in competitive sports and lead healthy and active lives (Department for Education, 2013) but also had additional aspects such as fitness, relaxation, sensory and an option for the pupils to choose. The programme was designed to enable the pupils to feel; **f**lexible, **e**mpowered, **e**asy-going, **l**evel, **g**reat, **o**rganised, **o**riented and **d**ynamic. It was also created to enable the pupils to have, **f**un, **e**njoyment, **e**ndurance, **l**aughter, **g**rowth, **o**wnership, **o**ptions, and **d**irection. Once the 'feel good' programme had been set in place for a year, Stockley (2010) gave anonymous questionnaires for the support staff of the pupils taking part in this modified curriculum to fill out to get their opinion on the impact it was having. The responses from the support staff were confident, they believed the autism friendly curriculum had a positive impact on the pupils and their participation within PE lessons over the year for pupils in key stages two to four in the United Kingdom. Andrews (2018) has similar thoughts to the Stockley (2010) as they explain that the aspirations, self-esteem, and motivation of pupils with autism spectrum disorder were increased through including more opportunities for creativity, curiosity and fun during lessons which meant more of the pupils wanted to participate because they noticed that the activities were simpler for them. This has been found though Stockley's PE curriculum programme one aspect was to give the pupils an option. There is no evidence to suggest the feel good programme continued as it was a trial however Stockley (2010) stated that the PE staff at the school were still looking for ways to enhance the program.

Davis (2010) acknowledges that pupils with autistic spectrum disorders could need a form of physical assistance to understand the directions; throw, catch, kick plus others. The Youth Sports Trust (2008) created a framework

in which interventions and prompts can be used to aid the teaching of PE to pupils with autism. It can range from the task being executed with no interventions from the teacher to full assistance both physically and verbally. The lowest form of prompts include indirect and direct. Indirect prompts are setting expectations to the pupils with the intentions of them executing the activity successfully. Direct prompts set out specific expectations to the pupils so that they are aware of the activity they are going to carry out. The Youth Sports Trust (2008) understands the next form of prompts are gestures and modelling. Gestures are verbal direction paired with prompt cards, pointing and hand movements which will help to aid the pupils understanding. Modelling is showing the pupils what is expected of them without any form of physical contact and then the pupils will imitate this in their own learning (the Youth Sports Trust, 2008). The highest form of interventions that can be used are partial physical assist and full physical assist. Partial physical assist is when supportive guidance is given to aid the pupils in performing the activity, however it is not fully intrusive on the pupils learning. Full physical assistance is intrusive and is when the full assistance is given to enable the pupils to complete the movement successfully. For example, guiding the pupils hand to throw a ball. The level of intervention used will depend on each pupils need and ability (Youth Sports Trust 2008).

However, Lieberman and Houston-Wilson (2018) have given ideas to inclusion by pupils, they underline that the pupils can aid classmates with autistic spectrum disorders by talking clearly and only giving one or two simple instructions at a time, redirecting the classmate if they are doing an activity incorrectly and they could help their classmate by learning what makes them happy, sad, angry, or frustrated and conveying it to other classmates and the teachers in the class too. There are many ways highlighted to have inclusive PE for pupils with autistic spectrum disorders. Including pupils has many benefits however there is a vast number of barriers which make participating difficult.

2.14 Benefits of participation

The main focus of the parents is to teach their pupil how to talk, how to make eye contact or how to sit still in social environments. Yet growing research suggests that physical activities can offer many benefits that therapy cannot. Srinivasan et al. (2015) express that activities that range from yoga to creative movements to robotic movements can all be beneficial. An eight-week study showed improvements in the pupils social interactions, motor skills and communication skills.

Though there are many barriers (discussed in the next section) to physical activity for pupils with autistic spectrum disorders, there are also benefits (Must et al. 2015). Healy et al. (2018) understands that using physical activity to improve having a lack of social skills as and when it is appropriate by implementing physical activity plan. They recruited participants through a week-long summer camp specifically for pupils with autistic spectrum disorders. The meta-analysis from the study identified pupils who participated in physical activity programmes that were specific to individuals with autistic spectrum disorders proved to have noteworthy improvements in both their social and communication skills, such as physical activity promoting appropriate play behaviour and promoting interactions with other pupils, siblings, and teachers. Within Healy et al *'s.* (2018) analysis the specialised exercise programme that was provided, improved the motor skills among the pupils participating with autistic spectrum disorders. These interventions improved the pupils walking, jumping, balance and skipping through using the young athletes programme, trampoline training and through a stimulated horseback riding program, however these are not possible in PE lessons. The analysis from Healy et al. (2018) confirmed that from the specialised programme, pupils on the autistic spectrum had significantly improved their strength and stamina through the physical activities, this was measured through the use of Nintendo wii exergaming, aquatic exercise programmes and horse riding programmes. Previously Must et al. (2015) understood a barrier to be having a lack of skills in physical activities. However, Healy et al. (2018) uncovered throughout the specialised activity programme, the pupils began to develop improvements in skills sets such as balance, motor control and mobility skills.

2.15 Barriers of participation

Bremer and Lloyd (2016) underline that although it has been discovered that many pupils with autistic spectrum disorders have a poor level of motor skills, physical activities are often pushed aside for other skills that parents deem to be more useful. There are different elements that can influence the participation of pupils in sport with autistic spectrum disorder. These could be pupil influenced and parental influenced (Must et al, 2015). A parent influenced barrier may be that they have other pupils to take care of or work commitments. A pupil influenced barrier has factors include behavioural problems and low ability motor skills.

Studies show that the research is mainly completed through the perceptions of the parents and carers of physical activity barriers for example; (Khader and Pehlivan, 2016: Must et al. 2015 and Memari et al. 2015), rather from the opinion of the pupils in question the National Institute of Deafness and Other Communication Disorders (NIDCD) (2017) understands this to be because pupils on the autistic spectrum could have problems with the

meaning and rhythm of words and sentences, this is a barrier due to the instructions and activities not being understood by the pupils. Healy et al. (2013) conducted a study to find the perceptions of pupils aged nine to thirteen years with autism in PE. Within the study they uncovered issues that the pupils had with participation. These findings were categorised into three themes: individual challenges, peer interactions and exclusion. The individual challenges include the need for adapted PE, ways to overcome this could be an adapted PE programme, adapted equipment or rules, sensory issues (the sensory issues may include the sports hall being too bright, there being too much noise, or it may be too busy around the pupil, causing a sensory overload) and fear of injury. In another study Healy et al. (2018) highlighted a personal barrier for pupils with autism, this was that they possessed minimal social skills. Another barrier that was brought to light by Healy et al. (2018) was poor motor skills within physical activity, as fundamental motor skills are required. Flintoff and Scraton (2001) suggest that teachers should consider those sensory issues when planning and teaching PE, so they do not become a reason that impedes a pupil from participating. The National Autistic Society (2016) affirm that people on the autistic spectrum find it difficult to process everyday sensory information. Any of the five senses can be over or under sensitive or both at different times. The sensory differences can have an effect on behaviour and could result in a sensory overload. Below is a table of the five senses and examples of what could be causing the over and under sensitive senses.

Sense	Under Sensitive	Over Sensitive
Sight	• Objects appear dark or lose some features • Vision is blurred but peripheral vision is sharp • An object is exaggerated but peripheral vision is blurred • Poor depth perception and/or clumsiness	• Distorted vision- objects and bright lights can appear to move around • Fragmented images - easier focus on detail • Difficulty sleeping as sensitive to light
Sound	• Could only hear sounds in one ear • Might not acknowledge certain sounds • May enjoy crowded or noisy places	• Noise may be magnified and become distorted and may be able to hear conversations in the distance • May not be able to cut out sounds
Smell	• Some may have no sense of smell and may not notice extreme scents • Some may lick items to get a better sense of what they are	• Smells may be intense and overpowering • People may have an aversion to others with distinctive perfumes or shampoos.
Taste	• Could like spicy foods • Could eat or put nonedible items in the mouth such as stones, metal, or grass.	• Could find some flavours too strong • Certain textures could cause discomfort- may only eat smooth foods
Touch	• Holds others tightly • May have a high pain threshold • May be unable to feel items in the mouth	• Touch could be painful or uncomfortable • May dislike having anything touching hands or feet • Difficulties brushing/washing hair (The National Autistic Society 2016)

Table 2- Five senses and effects of autism.

Rider (2017) voices that pupils with autistic spectrum disorders can become overwhelmed with too many sensory stimuli in a physical activity setting, however if a suitable programme is planned and implemented well the challenges can be properly managed and physical activities could help pupils on the autistic spectrum thrive. Montes and Halterman (2007) conducted a study to identify bullying and pupils with autistic spectrum disorders. The peer interaction consisted of positive and negative aspects, initiations of friendships and bullying by both pupils that attend mainstream and special educational needs schools, the study revealed instances in PE where victimisation had occurred however there was no mention of initiation of friendships as the study focused on bullying of autistic spectrum disorder pupils. Bejerot et al. (2011) also identified that bullying of individuals with autistic spectrum disorders has been associated with an absence of social ability and having poor motor skills, in addition to this Stobart (2009) expresses that due to having difficulties with communication, pupils with autistic spectrum disorders may be unable to report incidents of bullying to teachers, however not all pupils with autistic

spectrum disorders have difficulties with communication. The National Society for the Prevention of Cruelty to Children or NSPCC (2018) define bullying as a behaviour that hurts someone else. it includes name calling, hitting, pushing, threatening, and undermining someone. Lewis and Humphrey (2008) also discovered previously that social isolation and bullying were common in their study of 'bullying of autistic pupils in mainstream schools' however Sainsbury (2002) recognises that pupils with autistic spectrum disorders prefer to play individually rather than playing with their peers, which may increase the likelihood of them being bullied psychologically as well as physically. Montes and Halterman (2007) reveal that pupils with autism are victimised more by being singled out by their peers than by pupils that do not have autism, Montes and Halterman (2007) state that this could be due to some of the pupils in the study having treatment for aggression and because of hyperactivity. Healy et al. (2013) findings also agree with this statement as segregation by other pupils was a barrier that was very prominent, this was shown through interviews. The third stage: exclusion this covers the activities not being adapted for everyone to access them, the teacher removing the pupil from the activity because they were not ready to participate and pupils who requested to be removed during ball games as they felt more relaxed if they are not playing as they felt they were not very good at the sports being played. Teachers removing and allowing their pupils to sit out of PE lessons conflicts with the national curriculum's statutory inclusion statement as the Department for Education (2014) determine that pupils need to have suitable learning challenges put in place, respond to pupils diverse needs, and overcome potential barriers. This was obtained through the researching inclusiveness as Healy et al. (2013) recognise that one cannot be found without the other.

2.16 Non-Verbal communication and body language

When collecting and analysing interview data, it gives the impression that researchers pay only a small amount of attention to describing non-verbal communication data (Denham & Onwuegbuzie, 2013). To be able to pay more attention, Dunphy and Farrell (2011) stress listening to all of a child's ideas. Ideas which include expressions such as body language, facial expressions, pointing and silence instead of only using the conventional question and answer style of interview. Using non-verbal behaviours such as eye contact, head nods and sounds such as "mm" or "really?" as well as other verbal prompts such as "tell me more" is a way of encouraging more from pupils in an interview without asking closed questions (Fargas-Malet et al, 2010). Being able to identify positive and negative body language is also an advantage when collecting interview data. According to Cherry (2019) positive

body language demonstrates an open posture and hands placed in the lap whereas negative body language is classified as the interviewee having crossed arms, clenched fists, and rapid blinking.

Chapter two was a review of literature significant to this study. The literature selected explained the experiences pupils with autism face within PE, physical activity, and sport.

Chapter 3

Research Methodology

3.1 Introduction

Having studied the literature and findings from previous experiences of autistic spectrum disorders and PE studies in chapter 2, this chapter investigates the interpretivist epistemology and the constructivist ontology outlooks recognised within this research study, along with the approaches of data collection and the analysis that is thought most applicable to be able to collect data that acknowledges the research questions best. This section also houses the design of research, the participant information and explains how the research was carried out. This chapter will also detail the participants that were interviewed within this study and information about their autistic spectrum disorders.

3.2 What is a Methodology?

Methodology refers to the ways by which knowledge and understanding are established (Veal and Darcy, 2014). Kothari (2004) outlines research methodology is the particular course of action or technique that is utilised to categorise, select, process, and examine information. The methodology section enables the readers of research to critically evaluate a study and be able to view how dependable, credible, and confirmable the study is. Kumar (2011) understands a methodology is able to answer two questions; 'How was the data collected' and 'How was the data analysed?' A methodology is mainly the way in which knowledge is collected for the study and it is strongly liked to epistemology which is the philosophy of how information is attained (Gratton and Jones, 2010).

3.3 Qualitative research

In contemplating the research question concerning the experiences of pupils with autistic spectrum disorders in PE, qualitative research was employed. Most research within sport involves the collection of data, analysis, and presentation of analysis this can be either through qualitative research or quantitative research (Veal and Darcy, 2014). Doody and Noonan (2013) depict that qualitative interviews have been a common vital method of research this is because researcher can probe the participant's responses and pursue additional explanation. Qualitative research has been explained as being concerned with qualitative situations that relate to or involve quality or any non-numerical data (Young, 1960). Jones (2015) adds to this that qualitative research can obtain meanings or

qualities that are not measurable such as feelings, thoughts, and experiences, this is important because it can investigate participants motives for acting in a particular manner and it could allow the participant to understand events differently (Doody and Noonan, 2013). Veal and Darcy (2014) suggest the qualitative approach to research is mostly concerned with data in the form of words, in addition to words the data could also include pictures and sounds. Qualitative data also aids in uncovering trends and opinions, which can commonly come from individual interviews and observations (Veal and Darcy, 2014). Ackroyd and Hughes (1992) assert that qualitative research aims to discover the fundamental reasons and requirements and it uses in depth approaches such as interviews for the purpose. When utilising qualitative research methods, it is easier to gather larger amounts of data about the research participants (such as individuals, groups, places, events, and facilities). The collection and analysis process often place a practical limit on the number of participants that can be included in the research study (Veal and Darcy, 2014). Smith (2018) affirms that the approach of qualitative research involves attaining a full and rounded account and understanding of the behaviour and outlooks of the individuals. Though the qualitative approach is a firm method to use it also has some weaknesses, these include the researcher's categories and theories that are used may not reflect others understandings as opposed to the data being based on the participants own categories, the researcher may miss out important data due to focusing on the theory or hypothesis testing too much rather than focussing on the actual theory and the knowledge produced may be too common to be applied to stipulate the local circumstances, setting and people (Smith, 2010).

Within the study the researcher will be taking a qualitative approach as semi-structured interview process is being utilised to collect data , this is in accordance with Bryman (2004) as the approach of qualitative research tends to be less structured. Qualitative research was also the researchers chosen method as it is useful when studying a limited number of in-depth circumstances (Smith, 2010), it provides personal experiences of occurrences, produces data that is based on the participants own groupings of meaning and provides data that is cross comparable and analysable (Smith, 2010), such as pupils with autistic spectrum disorders and their experiences in PE.

Magee (1998) states that philosophy has advanced in such a way that two essential questions have been shaped. The first is 'what is the nature of whatever exists?' and the other is 'How, if at all, can we know?' Inquiries into the first question, about what exists and the nature of being, establishes the area of philosophy called ontology. Investigation in to the second question is based on the disposition of information and what, if it is true what we already know, this is called epistemology (Magee, 1998).

3.4 Ontology

Ontology refers to the viewpoint of the existence and nature of occurrences and what exists to be known (Gratton and Jones, 2010). Smith (2010) believes ontology to be the division of philosophy that is related to questions of what actually exists and how we view it in reality. Veal and Darcy (2014) explain that ontology is a way of looking at the world. Constructivist ontology is suggested to treat people as participants within research and not just as objects as in the objectivist approach (Lincoln and Guba, 2000). Bryman (2004) illustrates objectivism as an ontological position that emphasises that social circumstances and their meanings have an existence that are independent of social agents. Within a constructivist approach the researcher's perception is not honoured and the emphasis is placed on the opinions and realisms of the research participants, as opposed to the nature of reality presumed by the researcher within a positivist approach (Veal and Darcy, 2014). Constructivism is a philosophical approach that argues social existence and its meanings are regularly being accomplished by social agents, which implies that the phenomena is in a continuous status of amendment and change (Bryman, 2004). Researchers can always present specific version of social reality, rather than regarding one as definitive (Bryman, 2004). In this research, the pupils with autistic spectrum disorders meanings are constructed through interactions within their PE lessons. The researcher has taken a constructivist approach as research around autistic spectrum disorders is constantly being revised and new characteristics and categories are always being discovered (Zeldovich, 2018). More importantly the researcher is investigating human and personal experiences which are individual and not independent of social agents (Smith and Sparkes, 2016).

The researcher has drawn on the experiences that the pupils with autistic spectrum disorders had when participating in PE lessons. In order to achieve these insights an interpretivist approach was undertaken, which will now be reviewed.

3.5 Epistemology

Thomas (2003) understands epistemology to be the branch of philosophy and of research that is concerned with knowledge and how we come to know things, epistemology asks questions such as 'what is knowledge and how do we know thigs? Are there different kinds of knowledge? Are there good procedures for discovering knowledge? (Thomas, 2003). Epistemology is a subdivision of philosophy that studies knowledge, it challenges to answer what sets apart true and false knowledge (Silk et al. 2005). Smith (2018) perceives positivists to believe that everything is eventually measurable and allows the approaches of natural science to study reality and more.

According to Glesne and Peshkin (1992) viewing the world through observable and measurable facts, the positivist paradigm often supports quantitative methods. Alternatively, interpretivists select specific approaches that respect the differences between society and the objects of natural science. This therefore requires the meaning of social action to be understood (Smith, 2018). Interpretivists oppose that only through the particular analysis of and involvement in society, can reality be understood. The study of phenomena in their natural environment is a key component to the interpretivist viewpoint, with the recognition that researchers cannot avoid effecting the experiences that they are studying (Young and Atkinson, 2012). Interpretive approaches also allow the researcher to explore and uncover explanations rather than presume them from the measurements, this approach is also able to describe the relationship from the opinion of the participant (Gratton and Jones, 2010). For interpretivists, reality is smooth and reliant on the meanings that are given to objects and events, which because of this are influenced by the interpretations that we have. This means that we cannot know reality for real, we can only know how it is experienced and made meaningful (Gibson, 2017). Bhattacharya (2008) comprehends that in interpretive research, significance is revealed, exposed, and come across. The focus is on making sense of the research, explanation, and detail. Making meaning of the research is understood as the prime goal of interpretive research in the understanding of social occurrences. Willis (2007) explains that a qualitative method often give rich accounts that are essential for interpretivists to be able to fully understand the perspectives. Qualitative methods are usually maintained by interpretivists as the interpretive concept displays a world where reality is socially created, intricate and always changing (Thomas, 2003). Gratton and Jones (2010) propose that the subjective nature of interpreting participant's thoughts and feelings leads to questions over reliability, trustworthiness, credibility, and confirmability (these will be discussed later in the chapter).

This research will take an interpretivist method as within the study there will be differences between the participants and the objects of natural science (Smith, 2018) and unlike the positivist approach the participants will not be identically measurable. An interpretivist approach was also utilised as it generates a better understanding of the experiences that came from the socially constructed place of meanings of the pupils with autistic spectrum disorders. This approach was used to collect qualitative data during the PE lessons in order to comprehend and describe this social realism (Crotty, 1998).

3.6 Inductive Approach

Based on the area of research, there are two forms of reasoning: Inductive and Deductive. Young and Atkinson (2012) deem that inductive research concerns producing concepts or ideas from conducting research that is endeavouring to make a general inference from carrying out observations. A deductive approach is initiated with a theory that guides the researcher into making observations that try and test the theory and its worth (Young and Atkinson, 2012). This will be an inductive study as when utilising qualitative research, it usually adopts an inductive position. Inductive research as already conveyed by Smith (2018) generates ideas from research as opposed to deductive research following ideas already found from theories which follows a quantitative method.

The way to identify specific research issues comes from two approaches of reasoning, inductive and deductive (Thomas et al, 2015). This research will inhabit an inductive approach. The main purpose of the inductive approach us to permit the research findings to arise from the leading and important subjects in data, without limitations that are enforced by organised methodologies, inductive approaches are also proposed to assist the understanding and meaning in difficult data through summarising themes and categories from the raw data (Thomas et al, 2015). Theory forming begins by utilising inductive reasoning which is a method of reasoning where the principles are seen as providing some indication for the certainty of the conclusion (Veal and Darcy, 2014). Inductive research concerns producing concepts or ideas from research, such as trying to make a sizeable conclusion out of observations (Smith, 2010). Gratton and Jones (2010) recommend that inductive research is commonly linked with interpretive, qualitative studies where the aim is to collect data and analyse the data to develop an explanation. Smith (2018) suggests that it is through a mixture of both experience and rational reasoning in society that a researcher in given an opportunity to carry out research in a methodical way. Within the inductive approach, it begins with specific observations and measures, continues to highlight patterns and similarities, moves on to formulate a hypothesis and finally ends with drawing conclusions or generating theories (Gratton and Jones, 2010). Within an inductive approach the researcher will gather data, identify patterns, and develop a general level of focus (Thomas, 2016). In the instance of this thesis the researcher carried out ten interviews to gather the data and analyse through coding the experiences of pupils with autistic spectrum disorders have in PE lessons.

3.7 Reflexivity

Veal and Darcy (2014) describe that reflexivity is the procedure of investigating the association between the researcher and the subject of the research and reflecting on yourself as the researcher in order to provide a more effective and neutral analysis of data. While Holloway and Wheeler (2010) understand reflexivity to be the critical reflexion on what has been thought and done within a qualitative research project, it locates the researcher within the study. Brackenridge (1999) notes that reflexivity is becoming a progressively significant skill within research. Reflexivity is defined as a process by which the effect of the researcher and their own individualities (for example, background, values, and attitudes) about the research subject is taken account of. The researcher is from a background of going to school (primary and secondary) with pupils with special educational needs and disabilities (SEND) as both schools were mainstream alongside a special school. For the past ten years the researcher has committed themselves to a summertime playscheme for pupils with severe and complex disabilities, the scheme allows for pupils to experience a variety of different, fun and risk taking activities. The researcher has also worked with both pupils and adults with special educational needs and disabilities especially autistic pupils and understands pupils with SEND should have equal opportunities to everyone else. The researcher also has a background of sport as they have competed in different sports their whole life and completed an undergraduate degree in PE and sport and exercise sciences. The researcher also believes that pupils should all be given a high-quality PE curriculum or as close to it as what the pupils can access. This has impacted the thesis as the researcher was able to understand that the pupils needed a little longer to understand and answer the questions and ask any questions they needed to whilst being patient and calm. The researcher's position will also affect what they choose to explore, the angle they take during the research, the methods that are judged most acceptable for the research and the findings that are considered most suitable (Malterud, 2001). An assessment of the position the researcher holds and authority relation between the researcher and participants is imperative towards an assessment of the 'truth' to the results (Brackenridge, 1999). Reflexivity is an important notion because it is focused on the highest fundamental hazard to the precision of qualitative research results (Roller, 2018). A reflexive approach to research includes clear and self-aware thought of the relationship between the researcher and the participants (Veal and Darcy, 2014). Etherington (2004) labels reflexivity as the critical stance the researcher adopts, the personal response and thoughts about the research and participants is taken into account and the researcher takes note of their own social location and how it can impact the study. In interview and questionnaire based research, contact between the researcher and participant is in the form of asking questions and differing the way in which the questions are phrased and the way they are posed effects the answers that will be given (McLaughlin and Torres,

2011). Reflexivity is often deemed in the framework of qualitative research and the greater the contribution of the researcher with the research participants the more relevant the research becomes (Veal and Darcy, 2014). The researcher was reflexive through being self-aware and through making consistent efforts to consider their own thoughts and actions within different contexts. The researcher also had an ongoing critique and critical reflection of their own bias (Mills et al. 2010).

3.8 Research design

Smith and Sparkes (2016) define an interview is a social activity where two or more people passively participate in personified discussion, both building information about themselves and the world as they work together in a certain place and through a variety of intellects. The interview has been labelled as the primary method that is used in qualitative research and the more direct, research focused interaction between the researcher and the participant (Kazmer and Xie, 2008). In the qualitative model, interviews are commonly seen as one of the best ways to enter another person's perceptions of the world and give a larger understanding of the social world (Patton, 2002). A qualitative interview looks to describe the meanings of the central themes in the world of the subject (Kvale, 1996). Qualitative researchers of sport prefer interview methods to any other interpretivist approach of data collection and interviewing is the most common methodological language for researchers who are qualitatively orientated, this is the case because when researchers are conducting interviews, they feel that more knowledge about the world is gained through questioning people about their opinions and experiences of their own world (Atkinson, 2012). Merriam (2009) describe the interview process as, getting a recording device, sitting down with the participant, and taking notes on non-verbal signals whilst the interview is progressing. Smith and Sparkes (2016) state that the purpose of interview in qualitative analysis is to create a discussion that invites participants to reveal stories, reports and descriptions about their experiences and feelings in relation to the question of the research, Gratton and Jones (2010) add that interviews allow for unexpected data to materialise, semi-structured interviews allow for the appearance of important themes that may not have risen from a more structured interview format. Interviewing is an open method of data collection that is best used when the researcher is wanting to gain a large amount of factual, realistic, and behavioural information on a small group of participants (Atkinson, 2012). There are seven styles of interview approach, these are: structured face to face interview, open face to face, life history, collaborative interviewing, focus groups, computer mediated and semi structured interviews. The approach the researcher employed was semi-structured face to face interviews. The face to face

interview method was chosen because the researcher wanted a method that met the individual needs of the participants as well as incorporating participatory methods into a semi-formal interview setting and capturing the voice of the participant (O'Reilly and Dogra, 2017). Smith and Sparkes (2016) affirm that this style of interview consists of ten to thirty questions (which is called an interview schedule) that are covered during the conversation (See appendix 1). Smith and Sparkes (2016) also maintain that the main aim of the interviewing process is to attain an essential factual understanding of the topic that is being researched, which could potentially break new ground in that subject region. Carrington and Graham (2001) encourage that more qualitative research with people with autistic spectrum disorders is necessary in order to discover the experiences on individuals from their own insight "We suggest that more qualitative research in the field of autism is necessary to achieve an in-depth exploration of the real-life experiences of these individuals from their own perspective" (Carrington and Graham, 2001, p47).

Interviewing can be a productive data collection method when researching pupils (Gratton and Jones, 2010). Eder and Fingerson (2011) give a single reason for interviewing pupils and that is to allow the participants to give expression to their own understandings and thoughts of the world rather than only depending on the thoughts and opinions of adults. Pupils have conventionally been left out of partaking in research as they have been seen as 'too immature'. Fundamental concerns, predominantly when working with younger pupils relate to ethical issues such as consent and confidentiality (Gill et al. 2008). O'Reilly and Dogra (2017) offer some advice on how to have a pupil centred technique during interviews, guidance such as being confident that the pupil has agreed to partake, giving information (such as what is expected and what will happen during the interview), giving the pupil control over the interview (allowing them to sit/stand where they chose), giving the pupil an opportunity to ask the researcher questions and finally using pupil friendly language. Holmes (1998) also adds that in order to get the richest data from pupils it is important to establish an understanding by playing the 'friend' role rather than taking a position of authority and that it should be considered in interviews with pupils to use alternative strategies such as role play. "Interviewing pupils and young people can yield a great deal of rich and interesting information" (O'Reilly and Dogra, 2017, p10). There are a few benefits that O'Reilly and Dogra (2017) have listed linked to both interviewing and interviewing pupils, these benefits are that; interviews are a flexible method of data collection, interviews provide stimulating and valuable data, the interviewing technique allows you to directly engage with the pupil and their answers allowing you to be sure the pupil has understood the question fully (O'Reilly and Dogra, 2017). Eder and Fingerson (2011) also include that when interviewing pupils, it is essential that the researcher starts by examining the power aspects between adults and pupils, Pupils predominantly have a

lower status than adults in society and this is not always something that is recognised by researchers. Pupils commonly believe that adults have power over them (Mayall, 2008), Agar (1996) suggests that a learning role is taken by the researcher during the interviews in order to create a 'one down' part.

Since the introduction of the United Nations conventions on the rights of the child was introduced in 1989, there has been more acknowledgment of the need to include the opinions of pupils and young people, this also includes pupils and young people with a disability in research (Lewis, 2009). The United Nations conventions on the rights of the child (1989) is a document with 54 articles that sets out the civil, political, economic, social, and cultural rights that all pupils are entitled to (UNICEF, 2018). The important of including pupils and young people in research is no longer contested, however there is still a continuing discussion on which is the best method to use to present the pupils views and to what degree that they can participate in the research process (Harrington et al. 2013). Belgrave (2016) recognises that there is narrow research carried out on the feelings and insights of people with autistic spectrum disorders and Preece (2002) believes there is also a small amount of literature documented about the methodological issues that researchers face when carrying out interviews with young people on the autistic spectrum. Beresford et al. (2004) emphasises that it is possible that researchers have been unwilling to involve people with autistic spectrum disorders due to the communication challenges that are linked with the disorder (Lewis, 2009). Although there has been research with pupils on the autistic spectrum (Preece and Jordan, 2010) there is not a single method for conducting research interviews with people with autistic spectrum disorders, as the approach taken needs to be adapted to each individual to cater for their specific needs (Norwich, 1996).

3.9 Participant Recruitment Procedure

Hill (2005) makes a distinction between the three differences between pupils and adults: inconsistency in verbal capability, uneven control in relationships and the added vulnerability of pupils. The uneven control of power in relationships between pupils and adults is based on the fact that society is adult-centred which means that pupils are under the control of adults (Punch, 2002).When looking to gain consent from the parents or carers (or also known as gatekeepers) the parents or anyone acting as the guardian of any pupil or young person that is participating in research must be self-assured that the pupil or young person's safety, rights and interests are being fully protected at all times (European Society for Opinion and Market Research, 2009). Permission means that the parent or carer agrees to the participation of their pupil, it is also held to the same standards of informed consent and is required for research that includes pupils (Joffe et al., 2001). Only people who have suitable ability

and are legally empowered can provide informed consent for themselves, in other situations parents/carers provide permission with assent of the pupil when possible (Roth-Cline and Nelson, 2013). Thereupon, consent was gained from parents/carers of the pupils within this study (Appendix 3).

Morrow (2012) has established that pupils have been vulnerable within research programmes and the research has not always been beneficial to them, therefore researchers have defined ethical procedures which guide the researchers with the best approaches of working with pupils under eighteen. Obtaining assent from pupils can provide those pupils with the right to choose whether they want to participate in the interview or not, gaining a pupils free choice to contribute can help the researcher to create a good relation through increasing comfort and building the trust of the participants (Kutrovátz, 2017). As pupils are unable to give legal consent to participate in research, Hordyk (2017) suggests that researchers have chosen to define pupils compliance to participate as 'assent' rather than 'consent'. In order to give assent Harcourt and Conroy (2005) emphasise that pupils who requested to participate can give their assent or dissent through either verbal or written communication or even through the use of symbols. Within the interviews the researcher used verbal consent before conducting the interviews, the pupils were asked if they were happy to participate. Suitable assent is a valued educative procedure that has important values of pupils contribution in research, including reducing the possibility of pressure and intimidation which promotes open discussion and establishes trust (Oulton et al. 2016).

To begin with, an email containing a consent letter was sent to the head teacher of the school to gain initial consent to attend the school and conduct the interviews (Appendix 2). This email and letter was forwarded to the special educational needs coordinator (SENCo) at the school, who granted permission and had made a list of the pupils they thought were most suitable for the study. After a meeting with the SENCo, pupils were recruited after discussing who they thought would be best to interview and who the SENCo thought would participate for the longest. After this, the pupils the SENCo had selected had the participation letter sent home to their parents/carer. There were fifteen letters sent out, this was a precaution as the researcher did not want to only send ten and not enough letters to return consenting to participate so therefore, more were sent out than needed to avoid this. Once the letters were returned 8 out of the fifteen of the parents/carers had responded that they were happy for their pupil to participate. Other pupils parents who the school thought would participate were contacted through a phone call and gave the school verbal consent for their pupil to participate, the school then forwarded the researcher to completed consent forms of these pupils.

Parental permission (Appendix 3) were filled out by a parent or carer as all participants were underage of eighteen years old. Assent forms (Appendix 4) which described the motive of the study were read out loud to the pupils who had been chosen to participate before the interview was about to begin. The suitable measures to participate in the interviews included consent and assent to participate, participation in PE and being available to be interviewed. Due to the participant's unique and spontaneous personality traits, the interviews were semi-structured and unique to the individual and could respond to the pupils individual responses. The interviews were distinctive to the individual as not every pupil is the same (National Autistic Society, 2018b) and not every pupil with autistic spectrum disorders will do the process in the same way. The participants were able to stop or withdraw themselves from the interview at any point. The International Charter for Ethical Research with children (2013) stipulates that pupils must be given the choice of whether they want to participate in research or not and it must also be made sure that they recognise what is comprised in the research study both during and after the procedure (Ethical research involving children, 2013).

Ethical approval was granted for this research by the Faculty of Education Research Ethics Committee at Canterbury Christ Church University, the Ethics approval letter can be seen in Appendix 5. The interviews were then compared through coding, Gibbs (2007) determines that coding is a way of categorising data in order to create a structure of particular concepts, which involves classifying and recording passages of text or other data (see also section 3.4).

3.10 Research setting

This study took place within the PE lesson of a primary school. The PE lessons took place in the school hall with a special educational need's teacher with 10+ years of experience at this school. The PE lessons for pupils that are part of the 'special school' always take place in the hall as this is the set routine for the pupils and corresponding with Applied Behaviour Analysist (2019) a routine becomes important, and any kind of change could result in a major cause of alarm for a person with autism. The interviews took place in a comfortable and familiar place for all of the participants, which was on the reading table, on the corridor next to the pupils classrooms. When interviewing pupils Keller-Hamela (2016) encourages that the place where the interview is taking place in a quiet and secure and that they should not be many toys in the room as this can be distracting, Irwin and Johnson (2005) also add that pupils should not be interviewed in too small of a space as through their research they have discovered that pupils are unable to confine themselves to a single small space. The school

where the interviews are taking place is very unique, they have a 'mainstream' side and a 'special school' side all within the same school. Their PE lessons take place in their classes (not sets) however the 'mainstream' side have 'mainstream' PE lessons (1 Teacher, 1 teaching assistant, 30 pupils) and the 'special school' side have 'special school' PE lessons (1 Teacher, 3 Specialised teaching assistant's -1 STA to 4 Pupils). However, when there is a Special Educational Needs pupil that is within a 'mainstream' class they have PE with that class and have one to one support during PE like they would for all other lessons. There are also some participants that take part in both mainstream and special school PE (see table 3 below).

Mainstream	**Special school**	**Both**
Callum	Connor	Kye
Bella	Jonny	Marcus
James	Holly	
Joshua	Liam	

Table 3- Participant PE lesson information

All participants were given the option of the corridor (this would still be confidential as all pupils were all still in lessons and classroom doors and corridor doors were all kept closed, so therefore others within the school would not be able to hear the answers given by the pupils only the researcher would) or the cooking/messy playroom. This corridor was given as it was closest to where the PE lesson was taking place. All pupils chose the reading table in the corridor.

3.11 Participants

The participants that were involved in this study were ten pupils with autistic spectrum disorders attending a mainstream and special school. All participants were allocated pseudonyms to protect their identity and confidentiality (table 4).

Name	Gender	Age
Connor	M	9
Jonny	M	8
Holly	F	9
Kye	M	9
Liam	M	10
Callum	M	8
Bella	F	9
James	M	9
Marcus	M	10
Joshua	M	9

Table 4- Participant information: gender and age.

3.12 Data Collection

Data for this research study included semi-structured interviews, questions within the semi-structured interviews were based on literature in the field. During the interviews a Dictaphone was used to record the data for later use in analysis, by using multimedia forms for example a Dictaphone, Gratton and Jones (2010) assert that interviews must be recorded in some form as it is not possible to rely on memory to analyse them. Markle et al (2011) suggests that researchers can improve the accuracy of their interpretations because they are able to return repeatedly to the original data. Doing this allows the researcher to analyse and share more data, by returning to the data it also allows for the researcher to gain a greater sense of the perception of the participants. This was introduced by explaining what it was, what it did and why it was being used (this is a microphone that records sound, I will be using it to record our chat, our interview, so I can listen back to it so I can hear all about your experiences of PE again). This needed to be explained to the pupils as it may have become a distraction to the participants, which in turn could have jeopardised the interview also if the participants thought it was a toy and began playing with it, it could mean that recordings are lost. Picture exchange and communication systems were provided by the school and were put on the table in front of the participants, they were also informed that they could use these if they wished to. Silas (2018) understands that the Picture Exchange Communication System, or PECS, can allow for people with limited or no communication the ability to communicate using pictures. The

National Autistic Society (2017) understand that some pupils with autistic spectrum disorders can be delayed with their use of language and other methods of communication can be used. They also acknowledge that echolalia can be used by pupils with autism. This is where the pupil repeats what has been said already either because they do not understand or because they are unsure of how to respond to the question.

Each participant was asked ten questions, in their thirty minute interview. Although there was a thirty minute time slot the interviewer highlighted this to the participants as Devine (2018) states that autistic people can find any sort of change to their routine difficult to deal with, a way around this was for the parents or school to remind the pupil of the day coming up and clearly explain what will happen and the process of it. A time constraint of thirty minutes was put in place as there were ten interviews to get through, the interviews were led in a way so that the individual was most at ease. For example, each participant chose which chair they sat in when entering the corridor, they were not given any restrictions by the interviewer. The interviews were recorded on the Dictaphone and notes were made which recorded body gestures and movements, these were recorded as pupils with limited communication skills, are better at expressing their emotions and feelings through gestures and pointing (Alshurman and Alsreaa, 2015) and this could answer the question. These need to be recorded in note form as they were non-verbal and would not be recorded by the Dictaphone. Gratton and Jones (2010) also affirm that a face to face interview allows you to assess the participants body language, expressions and tone of voice which may be useful in the analysis of data. Positive body language includes an open posture and hands placed in the lap whereas negative body language is classed as crossed arms, clenched fists, and rapid blinking (Cherry, 2019). The pupils were asked open-ended questions which allowed them to express themselves freely because allowing to Vasquez (2000) open ended questions give more precise responses when the pupil is describing freely rather than when direct questions are being asked. It also allows pupils develop on their thoughts and give the researcher a better understanding of their logic of thinking (Garbarino and Stott, 1992). For example, the open ended questions included, (a) ‘what is your favourite PE lesson?’ And (b) ‘Can you tell me why?’ Throughout the interview participants were asked to elaborate on specific answers (probe questions) that were given, an advantage of face to face interviews is having the ability to use probe questions, and this is where the researcher can gain additional information. Clarification probes or elaboration probes can be used, clarification probes all the researcher to clarify any answer that was not clear and elaboration probes are used to gain a more detailed response about a particular point (Gratton and Jones, 2010). The follow up questions were used to discover the contextual sense of the replies from the participants (Merriam, 1988).

3.13 Data Analysis

The Dictaphone recorded interviews were listened to repeatedly and transcribed precisely by the researcher once the whole data analysis collection was complete. The purpose of the transcription method was to gain a physical document of the interview which encompassed all words that were vocalised by both the interviewer and participant. Pauses and non-verbal exclamations were not recorded as verbal school aged pupils can exhibit difficulties with spontaneous coordination between speech and non-verbal communication and their facial expressions can sometimes be inappropriate for the social context (Pudło and Pisula, 2018). The researcher transcribed the interviews and analysed the transcripts multiple times, to identify themes and categories from the semi structured interviews through a process of inductive coding.

3.14 Coding

Creswell (2015) defines coding as the process of categorising collected data into labelled groupings, it is a way of taking data by dissecting it to see what it produces and putting it back together in an expressive way. Coding was the key process to reducing data (Gratton and Jones, 2010). Coding is the first stage of forming a logical structure to the data collected (Gratton and Jones, 2010) from the transcribed interviews. The codes identified were labelled and tags assigned to units of meaning to the information compiled in this study. They were attached to varying amounts of data such as words, phrases, sentences, or paragraphs (Miles and Huberman, 1994). However, Gratton and Jones (2010) suggest that codes should be instinctive. The necessity for coding according to Creswell (2015) is because text data is compressed data which takes a long time to process and make sense of. Coding enabled the researcher to highlight comparable information from the data collected and find repeated patterns (Cohen, Manion and Morrison, 2011; Saldana, 2012). The following framework is how the researcher undertook an inductive coding approach 1) Reading the data carefully and assigning a code or category to all statements that relate back to the questions, 2) Rereading the qualitative data and highlighting other statements that align with the codes or categories 3) Analysing and looking for common patterns and explanations in the code and 4) Reading through the raw data to either analyse it or find a clarification for the ideas, this data was both assenting and conflicting of the literature found previously (Gratton and Jones, 2010). Figure 1 illustrates the process I used to analyse my data.

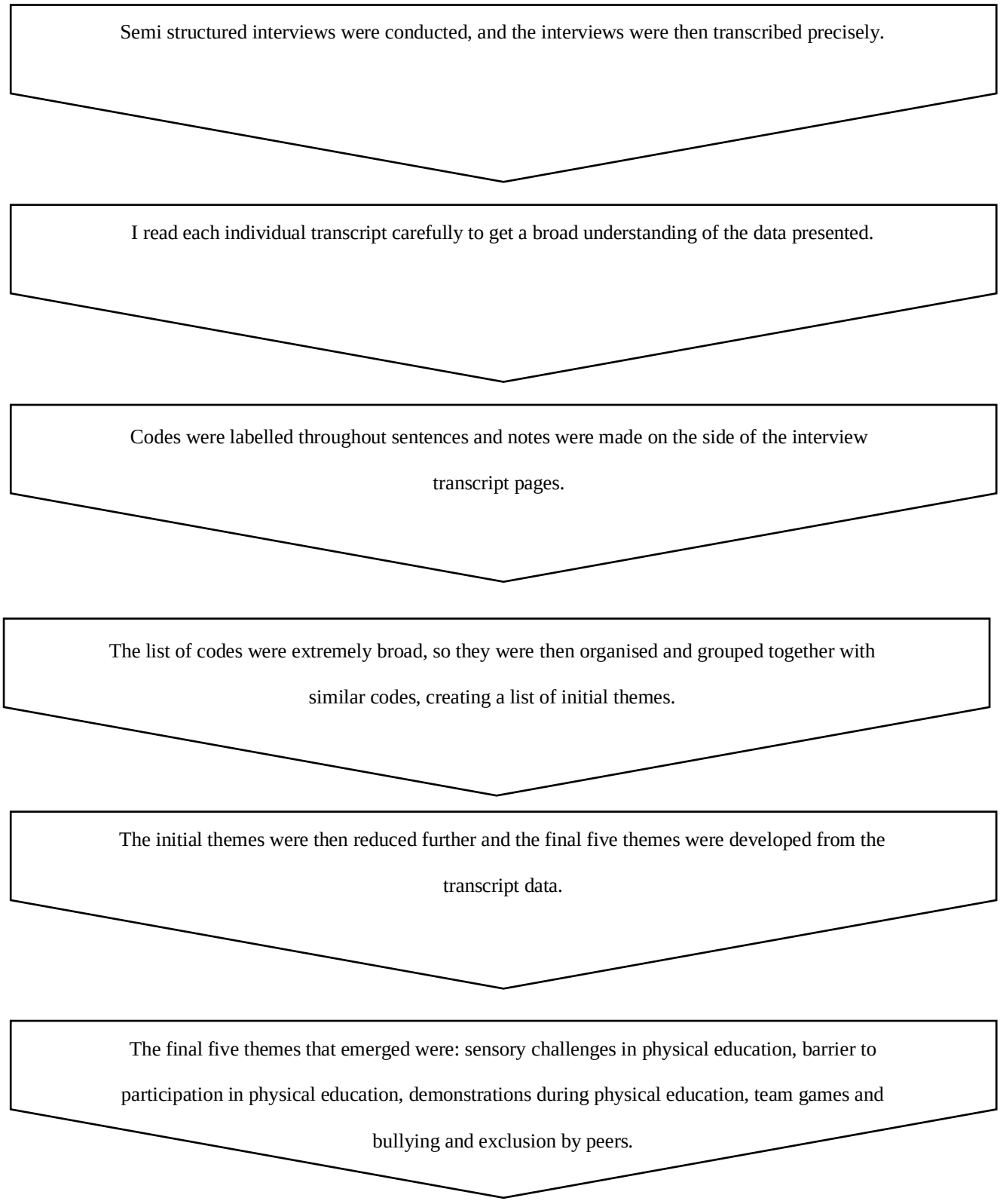

Figure 1- coding process

Following on from the diagram, Table 5 illustrates how the list of codes generated from the interview transcripts were grouped into initial themes and then further grouped into final themes.

List of codes	Initial theme	Final theme
Loud in sports hall other pupils are too noisy	Sound sensitives	Sensory challenges in physical education.
Too much lighting Too bright in lessons	Visual sensitivities	
Temperature struggles Sports hall is too small Too many children Sensory overload	Sensitivities to environment	
Communication difficulties Challenges with social interactions Change to routine	Social barriers	Barriers to participation in physical education.
Disrupting others Not listening to instructions	Negative behaviours	
Scared of getting hurt Causing injury to themselves	Self-injury and fear of injury	
Teacher demonstrations Physical interventions	Modelling	Demonstrations during physical education

Verbal instructions Prompt cards	Verbal and visual aids	
Hand gestures and pointing	Gestures	
Difficulties interacting in a game setting.	Interaction challenges in games.	Team games
Co-ordination challenges in ball sports. Favours individual sports	Confidence in game type.	
Unkind to other pupils Physical to others Verbal tormenting	Bullying peers.	Bullying and exclusion by peers.
Not chosen due to ability. Left out of activities.	Exclusion of peers.	

Table 5 – process of how codes became final themes.

3.15 Trustworthiness of analysis

To guarantee that the qualitative data was trustworthy, the researcher made sure that the data being collected was reliable in the form of consistency (Burke, 2017). This was to determine that the research study's results were consistent and repeatable, with semi-structured interviews being taken in the same order every time. Trustworthiness has been split into four sections: credibility, dependability, transferability, and confirmability. The credibility of a study includes finding whether the results of the study are believable (Holloway and Wheeler, 2002), the notion of credibility is concentrated on guaranteeing that the researcher's understandings of the data

precisely represent the created realities of the participants (Smith and Sparkes, 2016) the results of this study are similar to previous research findings which makes this study credible. Dependability concerned with the stability of the data over time and under different conditions (Guba and Lincoln, 1989), dependability focused on attaining consistency (Smith and Sparkes, 2016), the questions within this study were consistent and would still be relevant over time. Transferability and suitability is about making implications that range further than a specific set of results (Guba and Lincoln, 1989) and is the qualitative equivalent to simplicity (Smith and Sparkes, 2016), the results and methods of this study could be applicable to other studies with other populations. Confirmability is the procedure that the researcher takes to demonstrate that the explanations of the results are clearly consequential from the data itself, so that the study results reflect the experiences and views of the participants rather than the views of the researcher (Smith and Sparkes, 2016), the tools used for this study such as transcription are included within appendix 6, which demonstrates the results are from the data itself. A study is considered authentic when the policies in use are suitable for the true recording of the ideas of the participants and the study actually helps the participants and readers to appreciate their collective world. Holloway and Wheeler (2010) appreciate the authenticity considerations to make when analysing and reporting data are the fairness, the ontological authenticity, the educative authenticity, and the tactical authenticity. The researcher must be fair to the participants and gain their acceptance to participate through obtained assent (and consent from a parent or carer), as discussed previously. The ontological authenticity highlights that both the readers and participants of the study would have been educated in understanding the social world that is being studied. Educative authenticity follows on from ontological authenticity in the way that participants could progress a better understanding of others within the communal world and tactical authenticity declares that the research should enable the participants (Holloway and Wheeler, 2010).

3.16 Summary

This chapter explained the methodology that was employed for this research study. A qualitative research design was the basis for developing the research question and methods that were utilised for both the data collection and analysis. The primary process for this study comprised of informed consent forms being given to the parents/carers of the potential participants and assent forms being read to the participants. This research study was conducted within PE lessons. The data method, transcribed interviews and compared each interview to find any patterns that were highlighted across all of the responses.

Chapter 5

Discussion

5.1 Introduction

The rationale of this research was to investigate the experiences of pupils with autistic spectrum disorders during their PE lessons through semi structured face to face interviews. Within this chapter the data findings will be discussed in themes that were created through analysing and coding of the participants responses to the semi structured interview questions. The findings will be discussed in relation to supportive and contrasting literature from the literature review in chapter 2. How the pupils responded to the interviews in terms of their body language and the way they communicated during the interviews will firstly be discussed. Then the following five themes generated from the data analysis will be discussed:

Theme 1 - Sensory Challenges

Theme 2 - Barriers to Participating in physical education

Theme 3 - Demonstrations during physical education lessons

Theme 4 - Team Games

Theme 5 - Bullying and Exclusion by peers

5.2 Participant Recap

Connor, Jonny, Liam, and Holly are all part of special school PE lessons only. Kye's main class is in the special school, but he is also a part of year four mainstream PE too. Callum, James, Joshua, and Bethany are all a part of mainstream PE lessons, whereas Marcus' main class is in the mainstream provision he also takes part in year five special school PE. Kye and Marcus disclose some similarities and differences about their experiences in mainstream and special school PE. All participants and teachers have been allocated pseudonyms to protect their identity and to keep confidentiality.

5.3 Body language and means of communication

When interviewing the participants, they all exhibited positive body language with open posture and their hands in their lap (Cherry, 2019) when they were discussing their experiences of PE that they enjoyed. Though, when

individuals were discussing their experiences of bullying and exclusion their body language was more closed off with crossed arms, clenched fists, and rapid blinking (Cherry, 2019), so the questions were moved onto to another subject, as it was clear they were uncomfortable.

Many people with autistic spectrum disorders can have difficulty with interacting with other people, this also means that they can have difficulty with starting conversations, responding, and understanding people. Not all of the participants showed signs of body language, the majority of them sat still and answered the questions whereas others were up and demonstrating or repeating what the interviewer was saying in order to gain some clarity of what was being asked.

Connor used a large number of hand gestures during his interview and stood up for the majority of the interview as he was acting out the sports that he was talking about out. He also used a PECS board which was provided by the school specifically for his PE lessons and he used that to communicate the sports (such as football, basketball, and hockey) he wanted to talk about throughout too. This aligns with The National Autistic Society (2017) understanding of communication, they understand that some pupils with autism can be delayed in their use of language and other methods of communication can be utilised. They can use means of communication such as gestures, using pictures and body gestures.

When answering the questions Holly needed them to be repeated for the majority of the interview as she sat and rocked for the entirety of the interview. This is similar to what Grenier (2014) found as they emphasised that communication and social interaction are big factors, repetitive behaviours such as rocking, and flapping make their learning difficult. This could have been apparent because Holly was not familiar with the interviewer.

Jonny used a large amount of echolalia, he repeated a good deal of what the interviewer said as he did not understand some of the questions asked in the interview, he also used the PECS board that his class teacher supplied. The National Autistic Society (2017) understand that echolalia can be meaningful communication but sometimes can also mean that the person may not understand the question and may not know how to respond to it. Not every pupil with autistic spectrum disorder has barriers with communication, it is just a common characteristic linked to the disorders (Stobart, 2009), this is apparent during from this research as not many of the participants used other means of communication when answering the semi-structured interview questions. Less than half used an additional mean of communication.

Theme 1

5.4 Sensory Challenges in Physical Education

The first theme of the interview findings indicates the sensory challenges that reoccurred for some of the pupils during their PE lessons. Within this theme sensory sensitivities with the noise in the lessons, the environment and the lighting in the hall were uncovered. From the findings it was discovered that all ten of the participants had struggles with sensory elements within their PE lessons. There was no difference between the pupils that attended mainstream school PE lessons, the pupils that attended special school PE lessons and the pupils that did both. Menear and Smith (2008) understand that the PE environment can be an extremely stimulating sensory setting which could conflict the unique sensory information processing system pupils with autistic spectrum disorders already possess.

The research findings suggest from all of the participants, that having too many sensory stimulations in a physical activity environment can mean that pupils with autistic spectrum disorders can become inundated such as:

> *"I don't like PE the halls too small, it's too loud, there's too many kids in my class"* (Marcus, interview notes 17/05/19)

This is supported by Rider (2017) who understands that pupils with autistic spectrum disorders can become overwhelmed if there are too many sensory stimuli in a physical activity setting. This also supports Bella's experience as other sensory aspects that were identified from the data were the brightness of the sports hall, it being too noisy and too much going on around the pupil was an issue when it came to participating in PE:

> *"it hurts my eyes because it is very bright when I go in there and it makes me not really be able to concentrate and then I have to leave PE because I don't stay calm" (Bella, interview notes 17/05/19).*

Marcus also found difficulties with the lights in his PE lessons:

> *"there's too many lights on the roof so I can't see" (Marcus, interview notes 17/05/19)*

Healy et al. (2013) sustains this as they understand that sensory issues for pupils with autistic spectrum disorders may suffer with sensory issues that include the sport hall being too bright.

Findings from the semi-structured interviews demonstrate that the noise levels in PE lessons were an experience that participants drew on:

"it's really really loud and there is too many people and it makes me not concentrate" (Jonny, interview notes 13/05/19).

This shows that Jonny struggles with the experiences of noise volume and the population aspects in his PE lessons. This aligns with Sarris (2014) who suggests that pupils learn a great deal in PE, but loud and busy classes make it harder for pupils with sensory and social problems to learn and concentrate. Healy et al. (2013) also suggests that a sensory issue of too much noise or too much happening around a pupil with autistic spectrum disorders could result in a sensory overload. However, the findings also suggest that sensory challenges could be controlled, within the special school PE lessons this is apparent:

"It's loud in my PE lessons but my teacher gives me my squishy toy when I need to calm down" (Liam, interview notes 13/05/19).

This is supported by Barber (2010) as they state that sensory challenges could be addressed and calming supports such as stress balls or other coping strategies could be used to decrease the chance of a sensory overload occurring. The only pupil that mentioned a calming support was Liam, which was a stress ball. None of the other participants mentioned that they had one to use.

The findings also suggests that sensory overload can still happen, which could result in less progression or learning:

*Connor: I don't do much PE, I get taken out because I get too angry and I start screaming and crying sometimes" (*Connor, interview notes 13/05/19*).*

Grenier (2014) supports this as they express that keeping a pupils attention could be difficult, but a sensory overload could cause a loss of progressive learning and concentration.

The environment in PE can be something that pupils find sensory sensitivities with, the environment could cause sensory challenges, or it may cause no stress at all:

"erm when we are doing football it feels like it's a football stadium and when we do hockey it feels like a real hockey pitch" (James, interview notes 17/05/19).

This is demonstrated through Rudy (2019a) as people with autistic spectrum disorders are often highly sensitive to their environment however Lamb et al. (2016) express that the environment does not always bring stress.

On the occasion that the pupils did PE outside the weather was a factor that they experienced and was something that more than one pupil spoke about:

> *"I only like indoor PE because when we go outside, I get really really cold" (Holly, interview notes 13/05/19)*

> *"When it rains, I get really wet and I get really cold, then I don't like pe" (Callum, interview notes).*

This corresponds with Healy et al's. (2013) study as they also found that the participants within their study did not like participating in PE when it was cold or wet during outdoor PE. Research from Flintoff and Scraton (2001) also demonstrated that pupils with autistic spectrum disorders were not happy during PE when the weather was poor. Callum was asked more about the rain, and it was found out that, the class stay out if it is light rain but if it gets worse, they move inside to continue their lesson.

The temperature during indoor PE was also an issue that was found for one of the participants:

> *"I get so hot when we do indoor pe, it makes me not be able to concentrate" (Joshua, interview notes 17/05/19).*

Healy et al. (2013) also found that the temperature in the PE lesson was a sensory issue that pupils interviewed struggled with. The findings also suggest that one participant identified during the interview that they struggle with the temperature in both indoor and outdoor PE lessons:

> *"I don't like indoor PE because I get to hot and can't concentrate, and I don't like outdoor PE because I get too cold in the winter and too hot in the summer and I can't concentrate when it's like that" (Kye, interview notes 13/05/19).*

These findings are supported by Holecko (2019) as they understand that the environment in PE can sometimes feel too hot or too cold and many pupils on the spectrum have difficulties with sensory challenges that make situations difficult to deal with.

The findings from the interviews suggest that there are only sensory challenges when it comes to sight and sound as the participants gave no references to the smell (when asked the pupils voiced that there either was not a smell, or they could not remember if there was) or taste (no taste to PE) they experience when they are in PE lessons. According to Healy et al. (2013) the issues that have been found are limited in research on the experiences of pupils with autistic spectrum disorders in PE. Gillies et al. (2013) understands that in order to decrease the sensory

challenges, PE teachers could attempt to prepare before the lessons and use consistent classroom routines that could aid in reducing pupil's anxiety which may have a more positive impact on their behaviour. Flintoff and Scraton (2001) also suggest that teachers should consider these sensory issues when planning and teaching PE lessons, so they do not become a reason that hinders participation for pupils.

Through research it is evident that there is little conflicting investigations, if any on pupils experiencing sensory challenges in PE, however, there is an abundance of research that suggest strategies for teachers to enable pupils with autism to overcome these challenges. Menear and Smith (2008) suggest many approaches that can aid pupils through sensory challenges, these strategies include simplifying instructional directions to reduce noise and adapting equipment to overcome tactile difficulties. Preparation strategies can also be beneficial Groft-Jones and Block (2006) suggests marking activity areas, making the environment less distracting and using both visual schedules and cues to avoid pupils from becoming too over stimulated. These strategies can be useful, but it is always worth remembering that not every autistic pupil is the same and the approaches for successful PE may not work for all, as each pupil is different.

Theme 2

5.5 Barriers to Participating in physical education

When collating the responses of barriers to PE, the opinions of the pupil aligned from both the mainstream PE and special school PE lessons. Their main worries and barriers were social barriers, behavioural barriers and injuries worries.

Social barriers:

Social barriers were a factor that were apparent within this study. However, it was only shown from three of the participants. Social interaction was highlighted within the interviews with this participant, they uncovered that they only enjoyed taking part in PE if they knew and could speak to the other pupils:

> *"if I know the people around me and I talk to them I like PE, if I don't know them and I don't talk to them I don't like PE and I don't want to do it" (Marcus, interview notes 17/05/19).*

This is maintained by Grenier (2014) as they found that communication and social interactions are major characteristics of autistic spectrum disorders and could make learning difficult. An additional social barrier was uncovered as this pupil becomes stressed when talking to classmates and participating in ball games:

"I have to say talking to my classmates and doing things like football and basketball in PE makes me feel very stressed and I'm not good at doing it, so I ask to sit out and I like that a lot more" (Bella, interview notes 17/05/19).

Schmidt et al. (1986) supports this as they defined people with autistic spectrum disorders to have complications and difficulties with social interactions. This is also supported by Healy et al. (2013) as they found that pupils requested to be removed during ball games as they felt more calmed if they were not playing them as they felt were not very good at them. However, this is conflicted by the national curriculum as the Department for Education's (2013) statutory inclusion statement maintains that pupils need to have appropriate challenges set, respond to the needs of each pupil, and overcome any barriers that could arise.

An additional response from one of the participants identified that due to not having the same aged peers within their special school PE lesson:

"I don't feel like I have many friends in my class because none of them are the same age as me" (Jonny, interview notes 13/05/19).

This supports Must et al. (2015) as they discovered from their own study as they recognised that pupils with autistic spectrum disorders have an absence of the same age peers or the pupils having too few friends which leads the pupils to believe that they do not have any friends within activities. The participants that uncovered social barriers during PE from the interviews were all from different categories of PE classes. This demonstrates that social barriers can be faced by pupils in mainstream PE and special school PE.

<u>Behaviour:</u>

The pupils were all asked whether anything stopped them from participating in PE, the main responses were that the pupils did not participate if they were ill or if they did not have school, but one main barrier was the behaviour of some of the participants. Having poor behaviour seemed apparent for two of the participants and resulted in them either being sat out of PE for a period of time or not being able to participate at all.

This participant uncovered that they were not allowed to participate in PE because they do not always have good behaviour, or they were disruptive:

"when I don't have good listening, or I just be silly then I'm not allowed to do it" (Connor, interview notes 13/05/19).

The Department for Education (2013) understand that pupils with autistic spectrum disorders could have disruptive behaviours. When asked "How do you feel when you do not do PE?" Connor's answer was *"happy, I don't enjoy it".* He could be showing poor behaviour because he does not actually want to participant and wants to be taken out of PE on purpose.

Another participant was removed from PE lessons because of their behaviour, their behaviour changes when their routine changes which after asking more probe questions their routine changes every week as their teacher for PE changes every week:

Interviewer: is there anything that stops you from doing PE?

Joshua: when my teacher is different, I have to sit out because I am not good

Interviewer: when do you have a different teacher?

*Joshua: they change every week because we all do PE together, like my whole year (*interview notes, 17/05/19).

This aligns with the American Psychiatric Association (2013) as they declare that pupils with autistic spectrum disorders have difficulty adapting when their routine or behaviour changes, which this response demonstrates that Joshua has difficulties with. Due to not taking part in PE and not being able to handle the change in routine, Joshua is missing out on being taught basic movements (such as running, jumping, throwing, and catching) as well as evolving his balance, agility and coordination skills whilst applying them to a variety of activities. He is also not able to participant in team games and is therefore not developing any regular tactics for both attack and defence styles of games play. Without also participating he is not able to learn and perform simple dance moves and patterns which are all parts of the compulsory primary curriculum (Department for Education, 2013).

Both of the participants that faced behaviour barriers are from different PE classes. Connor is part of special school and Joshua is a part of mainstream. They both face behaviour barriers and due to not enjoying PE and to the class teacher changing every week.

Injuries:

The discoveries of this research suggest that injury worries were another barrier that emerged from the data however, injury fears were only evident for three of the participants answers. The findings suggest that one of the participants enjoys their PE lessons when under the surveillance of his teacher, as they feel safer and as if they are less likely to suffer an injury when she is watching:

> *"I like it when my teacher watches me in pe. She makes sure I don't get injured" (*Jonny, Interview notes 13/05/19).

This is supported by Memari et al. (2015) as from their study they discovered that a barrier for pupils with autistic spectrum disorders was them having fears of getting injured during any physical activity.

Another injury barrier highlighted was that a participant had a situational phobia when outdoor PE on the field was where the lesson would take place. This is reinforced by Evans et al. (2005) as they understand that research has previously shown that pupils with autistic spectrum disorders have more situational phobias and medical fears than other populations. This is illustrated by Holly's ideas who stated:

> *"I can't do PE on the grass because it makes my eczema come up and it gets really really itchy" (*Holly, interview notes 13/05/19*).*

Self-injury was also uncovered to be a barrier for one participant as they revealed in the face to face interviews that they didn't always take part in PE due to this:

> *Kye: "I don't do PE because I get upset and hurt myself and sometimes, I hurt my helper and the other kid in my class as well*
>
> *Interviewer: does this happen in both types of PE that you do?*
>
> *Kye: no, I don't get upset in special school PE because there's not that many people and I have more space to myself. (*interview notes 13/05/19*).*

Curtin et al. (2005) identified common themes in their study such as the pupils having meltdowns, causing self-injuries, and demonstrating more physical behaviours such as biting, kicking, and spitting. PE teachers need to be conscious of injury worries as if they are left unsolved this could be a repetitive barrier for pupils for future years. Kamlesh (2011) also underlines that systematic desensitisation and cognitive strategies could be a method of managing fears and anxieties in the PE environment for pupils with autistic spectrum disorders.

From the findings injury barriers were only uncovered by a few of the participants. The pupils that commented on injuries being a barrier were all part of special school PE lessons, however Kye who is part of mainstream PE as well, only highlighted that he faced self-injury during mainstream PE lessons.

It is beneficial to take into consideration that it is not only pupils with autism that face barriers to participating in PE, typically developing pupils face challenges within PE as well. Challenges that have been highlighted for typically developing pupils face can be of external and internal factors. External factors include previous negative experiences, peer disapproval, stereotyping and negative assessments. Whilst internal factors comprise of ability, self-consciousness, fear of being judged and competition (Somerset and Hoare, 2018). It is not only pupils with autism that are affected by barriers in PE however the barriers are all of great significance and can affect a pupils participation in lessons.

Theme 3

5.6 Demonstrations during physical education lessons

Pupils with autistic spectrum disorders often need a form of assistance in order to understand the directions they are being given. Physical and verbal prompts can often be used to make the teaching more understandable. The teaching in PE allowed this pupil to learn more efficiently through using verbal instructions and prompt cards:

> *"my teacher will always tell me what to do at the start of the lesson and she sometimes gives me these card things that show me how to do it. She gave me one in hockey last week that showed me how to hold my stick and hit the ball because I can never remember how to do it, but it really helped me learn it and now I remember" (*James, interview notes 17/05/19*).*

This links to the Youth Sports Trust (2018) concept of gestures as they express that teachers using pointing and hand gestures, verbal instructions and prompt cards will help to aid a pupils understanding of activities.

Another technique of helping a pupil to understand the activity in PE would be through the use of modelling and the pupil trying the skill for themselves:

> *Marcus: my teacher shows me how I do it and then erm I have to try it myself to see if I can do it*
>
> *Interviewer: is this the same in both classes?*
>
> *Marcus: Yes (interview notes 17/05/19).*

Barber (2010) suggests that giving simple demonstrations allows the pupils to attempt and imitate the activity. This was also reinforced by the framework set out by the Youth Sports Trust (2018) as they understand that modelling to the pupil what is expected of them will allow them to practice the skill and learn it for themselves.

Another level of intervention was physical assistance in the completion of a skill in order to achieve success:

> *"Mrs Smith sometimes holds my hockey stick or whatever stick we are using, so I hit the ball the right way. She sometimes helps me throw the netball to Connor too" (Jonny, interview notes 13/05/19).*

This is an aspect that the Youth Sports Trust (2018) also includes in their prompt intervention framework. They determine that physical assistance can be intrusive, but it can also enable the pupil to complete a movement or a skill successfully (The Youth Sports Trust, 2018).

Demonstrations can enhance learning in all domains, it can serve as a way of teaching or reinforcing psychomotor skills by allowing the teacher to provide an observable model for pupils to copy (Van Holst, 1997). Although verbal instructions, prompts cards, modelling, physical assistance, and simple demonstrations can all be effective within PE, Devine (2018) promotes that visuals give the most aid. They allow the pupil to see exactly what the teacher is explaining and can be a point of reference for the pupil to revisit if they are unable to process information as quickly as their peers. Visuals can also reduce the number of verbal instructions needed which can make learning the skill less overwhelming (Devine, 2018).

Theme 4

5.7 Team games:

Pupils with autistic spectrum disorders can find some team sports difficult (such as football, basketball, and hockey. Easier sports include swimming and running) as their disorders can create some significant challenges when team sports are involved, however there are some responses that understand some beneficial sports for pupils with autism.

This participant struggles with communication when they take part in team sports within their PE lessons:

> *Kye: "in PE we do lots of things like hockey and um football and sometimes um we even do basketball too.*

Interviewer: do you enjoy those sports?

Kye: no

Interviewer: why is that?

*Kye: I don't like talking to many people well I only like talking to Mathew in PE because he helps me but in PE, I have to talk to everyone, and I don't like it" (*Interview notes 13/05/19*).*

This is supported by Rudy (2019b) as they discuss that cooperative team sports such as football, basketball and hockey can be difficult for pupils with autistic spectrum disorders because they require a large amount of communication, and this is a characteristic that people with autism lack. This however is conflicting with the Department for Education (2013) as they list that Key Stage two pupils should enjoy communicating, collaborating, and competing with one another.

Another aspect of team games was that one of the participants understood themselves to not have skills in catching or strength to pass a ball:

"we do a lot of basketball, but I don't like it because I'm not strong enough to throw it to my partner and I can't catch the ball" (Bella, interview notes 17/05/19).

Holecko (2019) reinforces this as they understand that team sports that use a ball involve a great amount of strength and coordination and characteristics of autism often are linked to low muscle tone and having difficulties with their coordination. Although there are team sports that can be difficult there are also sports that can suit all the needs of a pupil with autistic spectrum disorders such as: swimming, dancing, and gymnastics however, this participant enjoys PE because they do lots of running because they can do it as an individual:

James: "we do a lot of running in our PE lessons

Interviewer: do you enjoy running?

James: erm I do yes, because no one tells me off if I do it wrong and because I don't have that I have to pass anything too" (interview notes, 17/05/19).

Rudy (2019b) maintains this as they recognise that running can provide a soothing sensory input, they also recognise that running can be a team based sport, but it is competed individually, which is a useful activity for pupils with autistic spectrum disorders as there is often only a little amount of communication required between the team. Pupils with autism face challenges with team games due to difficulties with communication, strength

or skill set and coordination. The Department for Education (2013) still suggest that KS3 pupils are required to communicate, collaborate, and compete within PE. Alternative sports and activities can be better suited that allow pupils to be individual and compete with each other at the same time (Rudy, 2019b).

Theme 5

5.8 Bullying and Exclusion by peers

Bullying:

When asked 'what are the other pupils like in your PE lessons?' three of the pupils answered that they did not have the best relationship with some of their peers and sensitive issues such as bullying arose from the responses of the face to face interviews. The researcher was aware that participants may become upset or anxious, so the researcher allowed the pupils to answer in their own time and also informed them that they did not have to add to their response if they did not wish to.

One participant that is part of both mainstream and special school PE lessons has issues with peers in both types:

> *Kye: everyone shouts at meal the time when I don't get it right and they always push me out of the way and say I'm rubbish, so I just go to the back of the line*
>
> *Interviewer: does this happen in both sparrow's class (special school) and black bird's class (mainstream)?*
>
> *Kye: erm yes, but it happens more in the black bird's class.* (interview notes, 17/05/19).

This conflicts with Lewis and Humphrey's (2008) findings as they discovered that pupils with autistic spectrum disorders are reported to be victimised by their peers more than pupils that did not have autistic spectrum disorders, which is the opposite to Kye's experiences as he has more issues with pupils in mainstream PE than special school PE.

However, another participant who is only in mainstream PE lessons has experiences of bullying from their typically developing peers due to not always communicating in the lessons and not having 'adequate' motor skills to their peer's standards:

> *Bella: I have to say that the other pupils are not very nice to me in my PE lesson*

Interviewer: in what way?

Bella: well I don't talk a lot in PE and they always come up to me and ask me questions for no reason and they make fun of me because I don't answer them. They tell me that I'm not good enough to do PE too

Interviewer: what do they say?

Bella: they say I can't throw or catch and that I'll never be as good as them because I'm rubbish (interview notes, 17/05/19).

According to Bejerot et al. (2011) bullying of individuals with autistic spectrum disorders has been associated with having a lack of social skills and poor motor skills, this aligns with Bella's experiences of PE. Olweus (1993) also defines that bullying has been associated with having a lack of social skills. Bullying and teasing were also experienced by another participant that was only part of mainstream PE:

Joshua: I don't get on well with a lot of my class

Interviewer: why is that?

Joshua: because they don't ever talk to me and they all call me names like '4 eyes' and 'speccy' and when our teacher calls us in to talk to us, they all push me out of the way, so they can get to the front and I just stand at the back by myself (interview notes, 17/05/19).

This links to Lewis and Humphrey (2008) as they also found that social isolation and bullying was common in their study, they found that mainstream pupils were bullying and teasing autistic pupils which is the same for this experience of Joshua. Sainsbury (2002) maintains that pupils with autistic spectrum disorders have trouble with reading social situations and understanding how to engage in them. Pupils with autism may often prefer to play individually as opposed to playing with peers however this may increase the likelihood of them being bullied (Sainsbury, 2002). Difficulties with communication also mean that pupils with autistic spectrum disorders may not be able to report incidents of bullying (Stobart, 2009). Strategies for primary schools to reduce bullying include designating an area for quiet play, increasing the level of supervision, and creating more structure by grouping pupils that teachers know work well together (Stobart, 2009). This could be an idea for the teachers of this studies participants, as introducing these factors could reduce the participants being teased and bullied in PE.

Exclusion:

As well as bullying, exclusion was also revealed to be another experience highlighted, however this was not what was experienced by all participants. Two of the participants of this study revealed that they felt they were excluded by peers from activities during PE lessons. Munk and Agergaard (2015) recognise exclusion has been shown to be an issue of concern in multiple studies that are investigating the experiences and perspectives of people with autistic spectrum disorders.

The response from this participant demonstrates that they have felt and experienced exclusion on more than one occasion during their PE lessons:

> *James: whenever I do PE, I always get left out. I don't get picked to be in anyone's team and I don't get picked to be anyone's partner either. No one ever passes me the ball in football, hockey or even basketball. They just don't pass me the ball at all. I just end up playing by myself or being put on a team where I don't want to be, and I don't get to do anything*
>
> *Interviewer: how often does this happen James?*
>
> *James: it happens all the time, almost in every lesson that I do. (*interview notes 13/05/19*).*

This is supported by Memari et al.'s (2015) findings as they discovered that pupils with autistic spectrum disorders faced experiences of exclusion during their PE lessons by their peers on more than one occasion. Another instance of the findings suggest that that participant felt excluded during team games and when they chose pairs in their PE lessons:

> *Holly: when we do PE, I don't get picked*
>
> *Interviewer: what do you mean by this?*
>
> *Holly: well when we do team games or have to work in pairs and we get to choose, no one picks me. I am always the last and have to work with our class helper or I get put with a pair and they don't pass to me or anything and they make fun of me.* (interview notes, 17/05/19*).*

This coincides with Healy et al*'s*. (2013) findings as it demonstrates the exclusion of a pupil with autistic spectrum disorders can face during PE, whilst also being picked last. Participants of their study also expressed experiences of being chosen last for team games or pairs as well. These findings of exclusion differ with Must et al *'s.* (2015) data as they uncovered that more of the participants of their study felt included rather than excluded from activities

during PE. Less than half of their participants uncovered that they felt excluded, which is similar to what has been exposed within this research study.

According to Stanley et al (2011) victims of bullying tend to avoid part of the school curriculum that make them feel vulnerable. As a result of this pupils respond by distancing themselves from PE. Montes and Halterman (2007) suggest that pupils with autism are reported to be victimised by their peers more than pupils without autism. However, Healy et al (2013) declares that bullying and exclusion are worldwide problems in schools, they are not just incidents that happen within PE or special schools.

5.9 Limitations

Firstly, a pilot study could have been carried out for this study. If there had been a pilot study the results would have shown that the interviews only needed to be ten to fifteen minutes long instead of thirty minutes. It would have also demonstrated that some of the questions did not have any worth to the study and were not applicable to the study. The pilot study would not have given any hard data but would have ensured that the interview methods would work in practice (Jariath et al. 2000). Another limitation found was the time of the day that the interviews were carried out (Monday 9:30am and Friday 1:30pm) the responses were more detailed when the interviews were carried out on the Monday morning than they were on the Friday afternoon as the pupils were harder to keep focused as the ability to maintain focus decreases during the afternoon (Sylwester and Cho, 1993). Communication was another challenge that was highlighted from this study, some of the participants found communicating their answers and elaborating on their feelings and experiences a challenge. Some of the pupils either needed the question repeating or took their time in answering after they knew what they wanted to say. Part of the interview process was allowing the pupils to be interviewed in a quiet and secure setting (Keller-Hamela, 2016) and a place that the pupils were familiar with. The pupils were given the option of where they wanted to sit on their corridor or the cooking/messy playroom, this proved to be a hard decision for some of them as they wanted to sit outside their own classroom, however this was not always applicable as the space, they wanted was not available. An additional limitation to this study could have been the time the interviews took place, the majority of the pupils that were interviewed said that they enjoyed PE so interviewing them during this time meant that they wanted to rush through, so they could go and join the rest of their class in their lesson. Not knowing the participants precise autistic spectrum disorder classification has also been a limitation to this study as this could have uncovered why a participant answered a question one way and another answered it differently.

Generalisability was another limitation as it is difficult to make statements about other pupils with autistic spectrum disorders due to the sample size of this study being small.

5.10 Conclusion and Summary

This study has focused on the experiences of pupils aged eight to eleven with autistic spectrum disorders within primary school PE. The research offers a richer understanding into related experiences of PE for the participants and allows them an opportunity to feel appreciated and understood. The participants were interviewed through a face to face semi structured technique. The purpose of this study was to investigate the experiences of pupils with autistic spectrum disorders in their PE lessons. The participants in this study were more engaged and foccussed when answering questions on experiences they had enjoyed. They were happy to answer those but when talking about experiences they had not enjoyed they were reserved but still managed to answer.

Five themes arose from the data as well as how the pupils reacted to the interviews, these are: Sensory Challenges, Barriers to Participating in PE, Demonstrations during PE lessons, Team Games and Bullying and Exclusion by peers. Overall, half of the participants stated if they did not participate in PE, they felt quite happy however if given the chance to change their lesson they mainly focused on changing the noise levels and light. Although both pupils in mainstream and special school voiced that they played the same team games, they had other activities that were very different. The pupils in special school PE spoke about how they played superhero tag and dodgeball, where they threw the balls mainly at their teachers. Whereas pupils in mainstream PE classes spoke of how they were creating their own style of game. Both styles of PE lesson relate to the National Curriculum for PE as for key stage two pupils should enjoy communicating and collaborating (mainstream PE) and competing (special school PE) with each other (Department for Education, 2013). The participants may express different styles of activities, but they all use the same equipment for their PE lessons, if looking at the inclusion spectrum and the 'equipment' phase of the STEP model, this could be utilised in order to adapt the difficulty level of the lesson. Lastly, all participants (although some struggled with changes to them), communicated affection towards their PE teachers, labelling them as kind as well as enjoying their style of command *"we all have to be on a horseshoe before she tells us what to do".* Although, team games such as football, basketball and hockey can be difficult for pupils with autistic spectrum disorders (Rudy, 2019b) all of the participants other than two acknowledged that they enjoyed playing those sports in their PE lessons. A main issue for many of the participants in this study was the number of pupils in the class doing PE and the space they are doing it in. if applicable teachers could give

pupils each their own area to do their small-sided games or individual activities in to make them feel as though they had more room. Again, if possible, teachers could split the class up into smaller groups with different tasks to make the pupils feel more at ease.

How the pupils responded to the interviews and their body language and means of communication demonstrated the participants severity of autism. One of the participants needed to use hand movements and gestures to get their point across, as their level of communication was very limited. Another participant repeated (echolalia) a great deal of the questions in order to understand them. Both positive and negative means of body language projected how a participant felt about their experiences of PE, highlighting many elements of both the positive and negative experiences.

Theme one: 'sensory challenges' involved the obstacles the participants faced when taking part in PE. Sensory sensitivities for the participants included there being too much noise, the class size, the size of the space and the lighting in the hall. All of the participants disclosed that they faced bad experiences that involved sensory sensitivities, sometimes there being more that one.

The second theme: 'barriers to participating in PE' uncovered social barriers, behavioural barriers and injury worries. Seventy percent of the participants were discovered to have a barrier that stopped or hindered the amount of time those participants spent doing PE.

Theme three: 'demonstrations during PE lessons' detected the type of assistance through demonstrations that was given to the participants during their PE lessons. Across the different type of school (mainstream and special school PE) both physical gestures and verbal prompts were utilised by teachers.

The fourth theme: 'team games' discussed the team games that were not very suited to pupils with autistic spectrum disorders, it also gave mention to the sports that could be beneficial. Team games were something that the participants enjoyed but also struggled with.

The fifth and final theme: 'bullying and exclusion by peers' indicated that although research may suggest that it occurs more within peers who also have autistic spectrum disorders, it can also take place where a pupil is part of a special school to mainstream cross over, as well as mainstream pupils.

Chapter 6

Conclusion

Healy et al. (2013) expresses that although some studies have investigated the experiences of pupils with physical disabilities, the perspective of those with autistic spectrum disorders remains disregarded. This investigation used an inductive style research approach and employed a face to face, semi structured interview technique. The participants were interviewed during their PE lessons. The reason for this study was to explore the experiences that pupils with autistic spectrum disorders had faced during their PE. To the researcher's understanding this is the first study that has used a school that has a special school provision and mainstream provision as one whole school, with pupils that participate within these provisions and also those that cross over between the two. This study provides the experiences of ten pupils with autistic spectrum disorders within their PE lessons.

6.1 Do pupils with autism experience barriers to learning in PE?

The barriers that the participants struggled with were social, behavioural and injury worries. For social barriers this meant that participants were not taking part in PE because their class was too big, or they did not get along with some members of their class or becoming stressed due to communication required in the team games. Behavioural barriers included participants not listening and being silly and missing out on PE, causing themselves harm to potentially be removed from PE and due to a change in a participants routine. These barriers were all contributing factors as to why some of the participants missed out on vital learning and PE lesson time. These could be improved through using smaller class size, individual activities as well as having a challenging yet safe surrounding with safety equipment and additional space to carry out activities.

6.2 Do pupils with autism experience sensory challenges within PE?

Within this investigation the participants faced many sensory challenges such as: too much noise, the temperature, the brightness of the hall, the space they worked in was too small, there being too many pupils in the same lesson and the feel of the games. All of the participants revealed from the face to face interviews that they had, had experiences with sensory sensitivities. Some participants found that they struggled with more than one sensory challenge where as others only emphasised one. Although these challenges did not always cause the participants to miss out on their PE lesson. These sensory sensitivities could be improved through having smaller groups for

the pupils to work in which could also decrease the noise levels, noise cancelling headphones for pupils that struggle the most with the noise or dimming the lights in the hall.

6.3 Do pupils with autism experience victimisation within PE?

Both bullying, and exclusion of PE were linked to negative experiences that have been had by some of the participants. The research demonstrated that pupils were more likely to face bullying by their peers who also had autistic spectrum disorders. half of the participants revealed that they had experienced some sort of bullying or exclusion however this was identified more within the mainstream PE lessons than the special school lessons. Having an adapted PE curriculum could prevent the exposure of bullying which could also reduce the possibility of pupils being victimised.

6.4 What prompts do pupils receive within PE?

A variety of prompts (such as pointing, hand gestures, verbal instructions, simple demonstrations, and physical assistance) and gestures were utilised within the PE lessons at this school. The participants identified the use of prompt interventions to show the correct movement, simple demonstrations to enable the pupils to copy, pointing and hand gestures to increase the difficulty of learning the skill and prompt cards so the pupils have to use their initiative to learn the skill. This was also across both mainstream and special school PE teachers of these classes.

Five themes emerged from the interview data that represented the participants experiences. These participant responses were their Body Language and means of communication and themes were: Sensory Challenges, Barriers to Participating in PE, Demonstrations during PE lessons, Team Games and Bullying and Exclusion by peers. Overall, half of the participants reported that they enjoyed PE and they were not happy if they missed it however the other half were happy if they were to miss it. Participants also discussed their favourite member of the class to work with and disclosed they were happy and enjoyed PE the most when working with that particular pupil, therefore if the teachers recognise this and proceeded to keep these pupils working together the pupils would have a lot more enjoyment for PE and would have a better experience too. There were many reports of sensory challenges that the participants faced when in their lesson as well as a few cases of injury fears and social and behavioural barriers. Lastly participants reported experiences of their teachers giving demonstrations, gestures and prompts of the activities which the participants gave fond and fun accounts of. The themes demonstrate

impacting influences of both positive and not so positive PE experiences which if take into account by teachers could improve the quality of their PE lessons.

6.5 Future Research

Pupils have originally been left out of research as they are viewed as being too immature (Gill et al. 2008) however gaining a pupils perspective could be a method for future research as it allows for pupils to give their own views of the world and allows for them to feel heard (Gratton and Jones, 2010), therefore working with pupils could be another area of focus for future research. The proportion of boys to girls in this research study was eight boys to two girls, according to the House of Lords (2018) one in one hundred and sixty pupils have autistic spectrum disorders and it affects five times as many males as it does females. This could be considered the same ratio as this study as a percentage both figures come out at twenty percent are female with autistic spectrum disorders. Mandy et al. (2012) suggest that boys and girls can be different in the characteristics they have as girls are reported to possess less repetitive behaviours and girls may also have less difficulties with socialising than boys. More research for girls with autistic spectrum disorders is required to investigate more of their experiences in PE and how the differences of their autism affect their participation in PE. All of the participants within this study participated in PE without the support of a one to one, future research could look at the experiences of pupils that have a permanent one to one. This may offer another perspective of experiences of PE for pupils with autistic spectrum disorders as it could focus on pupils that have a permanent one to one support. There is limited literature on this, so it could be a new research area. This study was conducted in a school in England. All pupils attended a combined mainstream and special school that brings together mainstream pupils and special school pupils in an inclusive learning environment, future research could examine the experiences of pupils with autistic spectrum disorders in other areas such as a special school only, a mainstream school only and also a secondary school to identify the differences in school type and age. Conducting research in the different types of schools would aid with the generalisability with this research. The accounts of the participants of this study and others could be an opportunity to understand why research shows that pupils with autistic spectrum disorder's activity levels in PE is lower than expected. For example, Pan et al. (2011) suggests that structured individual and group activities (such as running, dancing or team games) result in less physical activity than free play. Results can be understandable from this research as some of the pupils spoke about their barriers during PE and their reasons for not participating. Dunn (1997) understands modified PE curricula have the same aims as a regular PE curriculum,

but they have adjustments made to meet the specific needs and abilities of pupils that need additional support. This could be an additional path for future research to find whether adapted PE curriculums increase physical activity levels in PE.

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Appendices

Appendix 1 - Interview Schedule:

Tell me about your PE lessons

Can you describe what happens?

What PE lesson is your favourite?

What PE lesson is your least favourite?

Do you have different types of PE?

What are the types?

Which type do you like more?

What types of equipment do you use in PE?

What's your favourite type of equipment?

What equipment do you dislike?

What's the space like in PE?

If you could, how would you change it?

Is there anything that stops you from doing PE?

Can you tell me what?

How do you feel if you don't do PE?

Tell me about your teacher in PE?

Do you like it when they do that?

What are the other children like in PE?

What are your friends like in PE?

In games do the other children pass you the ball?

Can you describe the noise levels of the other children in the PE lessons?

Who chooses who you work with in PE lessons?

If you were to choose who would you like to work with?

How do you know what you're going to be doing in PE?

Can you describe how you will know?

How do they help you?

Is this the same in both classes?

Appendix 2 - Head teacher Consent Form

Dear MR Smith,

This letter is to provide you with some information and ask for your consent regarding a research project that I propose to conduct at XXX Primary School. The data will be used in my thesis for my Master's degree in Physical Education and Physical Activity by research at Canterbury Christ Church University.

The project will aim to investigate the experiences and challenges of physical education for children with Autism. I intend to interview ten children of year 4 and above. The interviews will last no longer than thirty minutes and they will be given complete freedom of whether they would like to participate. I would like to come in at any time that is suitable for you, however I would like to have my data collected before the middle of May.

This study will not knowingly involve any risk of harm/injury to the participants and does not involve the misinforming or deceiving of participants (all pupils will be given details regarding the study before they agree/disagree to take part). When writing up the study, anonymity of participants and the school will be maintained by using pseudonyms in place of real names. Data will remain confidential, and raw data and consent forms will remain safely stored. The raw data will only be used for this research project and will be destroyed after this project has been marked.

If you are happy for me to proceed, please sign the bottom of this letter.

Thank you,

Yours sincerely,

Madison Chapman

I _____ have read the above outlining the nature of the research project and give/do not give my consent for XXX Primary school to participate.

Appendix 3 - Parent/Carer Consent Form

Dear Parent/Carer,

This letter is to provide you with some information and ask for your consent regarding a research project that I propose to conduct at XXX Primary School. The data will be used in my thesis for my Master's degree in Physical Education and Physical Activity at Canterbury Christ Church University.

The project will aim to investigate the experiences of physical education for children with Autism. I intend to interview ten children of year 4 and above. The interviews will last no longer than thirty minutes and they will be given complete freedom of whether they would like to participate.

There is no meaning to cause any harm or distress and your child will be fully informed and asked if they wish to take part in the interview. The study can be stopped at any time and the researcher will be careful to be sensitive to the child's responses, with a familiar teacher or one to one present all the time. When writing up the study, anonymity of participants and the school will be maintained by using pseudonyms in place of real names. Data will remain confidential, and raw data and consent forms will remain safely stored. The raw data that is being recorded by Dictaphone, will only be used for this research project, and will be destroyed after this project has been marked.

Thank you,

Yours sincerely,

Madison Chapman

I understand that by giving my consent to my child taking part in the study, I am giving permission for the school to disclose my child's diagnosis of autism to the researcher.

I _____ have read the above outlining the nature of the research project and give/do not give my consent for my child to participate in this study.

Signed……

Appendix 4 - Pupil Assent Form

I am doing a study on what children like and do not like about PE lessons.

- If you do not want to talk to me, you do not have to, and you can get up and leave this conversation whenever you wish.
- You can also choose an adult to sit with you.
- You do not have to take part and can stop at any time.
- You can choose not to answer any question you do not want to.

Appendix 5 - Ethics Approval Form

Canterbury Christ Church University

18/EDU/004 **7th January 2019**

Dear Madison,

Project title: An Investigation into the Physical Education Experiences of Children with Autism.

Further to the email from Judy Durrant, this is formal confirmation of the approval of your ethics application by Chairs Action.

Please do let us know when you have completed the work so that we can update our records.

Good luck with this study!

Yours sincerely,

Chair, Faculty of Education Research Ethics Committee.

Appendix 6 – transcript analysis with coding

- Can you tell me about your PE lessons?
- Erm they've been going really well
- Can you describe what happens?
- We do lots of stuff like football, hockey, and basketball.
- What PE lesson is your favourite?
- football
- What PE lesson is your least favourite?
- Hockey
- Do you have different types of PE?
- Yes
- What are the types?
- Indoor and outdoor
- Which type do you like more?
- I like them the same
- What types of equipment do you use in PE?
- erm cones, balls, goals, hockey sticks.
- What's your favourite type of equipment?
- Football goals
- What equipment do you dislike?
- Hockey sticks
- What's the space like in PE?
- There's lots of kids and not much room
- If you could, how would you change it?
- The lights, there's too many lights on the roof so I can't see
- Is there anything that stops you from doing PE?
- No
- Can you tell me what?
- If I know the people around me and I talk to them I like PE, if I don't know them and I don't talk to them I don't like PE and I don't want to do it.
- How do you feel if you don't do PE?
- I don't like PE the halls too small, it's too loud, there's too many kids in my class
- Tell me about your teacher in PE?
- She helps me a lot
- Do you like it when they do that?
- Yes
- What are the other children like in PE?
- If I know the people around me and I talk to them I like PE, if I don't know them and I don't talk to them I don't like PE and I don't want to do it.
- What are your friends like in PE?
- They are sometimes helpful
- In games do the other children pass you the ball?
- sometimes.
- Can you describe the noise levels of the other children in the PE lessons?
- It's too loud
- Who chooses who you work with in PE lessons?
- My teacher
- If you were to choose who would you like to work with?
- No one really
- How do you know what you're going to be doing in PE?
- My teacher tells me before we go to lesson
- Can you describe how you will know?
- She explains it
- How do they help you?
- my teacher shows me how I do it and then erm I have to try it myself to see if I can do it.
- Is this the same in both classes?
- Yes

Key

Sensory- Sight

Social Barrier

Sensory- Sound

Sensory- Environment

Prompts- Demonstrations