

What do young children think and feel about others who learn and behave differently to themselves, and can those thoughts and feelings be changed?

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Abstract

Currently we know little about how young children perceive differences and what their perspectives are regarding a potential future in which DNA screening for learning and behaviour differences is routinely used in an educational context. The main aim of this study was to gain this understanding by conducting a Philosophy for Children (P4C) randomised control trial in which children's attitudes were measured about two non-gendered characters called Zig (with learning differences) and Zag (with behaviour differences). The participants were children, from two primary schools, based in the north of England ($n = 165$). An English version of The Chedoke-McMaster Attitudes Towards Children with Handicaps Scale (CATCH) (Armstrong et al., 2017) was used to assess children's aspects of attitudes (affective, behaviour and cognitive) before and after intervention. Content analysis of data gathered at post testing, from a series of open-ended vignette questions, derived a deeper understanding of children's thoughts about differences and predicting learning and behaviour problems, and whether they thought genetic screening had a role to play. A thematic analysis of the Philosophy for Children (P4C) discussion indicated the children's understanding of the origins and implications of being different. This study indicated that children's affective (feelings) aspect of attitude could be significantly altered towards someone with learning differences following intervention. These research findings also demonstrate that very young children can give their perspectives, particularly when they are given the opportunity to do so. This demonstrates the positive potential impact of early intervention on children's attitudes, tolerance, and acceptance of others who are different to them.

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Declaration by Author

I declare that this thesis is a presentation of original work, and I am the sole author. This work has not previously been presented for an award at this, or any other, University. All sources are acknowledged as References.

With Exceptions in Chapter 6:

Where children ($n = 128$) reported a response to each of four questions ($n = 640$ responses) and every fifth response ($n = 128$) was coded by a second researcher, an intern in the GOALS lab at the University of York.

And with Exceptions in Chapter 7:

Six P4C sessions were transcribed (all Session 4 sessions of the intervention), two sessions from EYFS, Year 2 and Year 5. A GenOmics And Life Stories (GOALS) lab team member deleted responses from participants who had not consented to take part in the study. Another team member then read and re-read the data, looking for patterns across the dataset. Initial codes were generated and discussed reflexively. The transcripts were re-reviewed, and codes finalised by me and my supervisor, before being analysed and organised into themes.

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Chapter 1

1. Introduction

1.1. There's a DNA Revolution

Research shows clearly that individual differences in educationally relevant traits such as cognitive ability, academic attainment and motivation are partly explained by individual differences at the level of DNA (Polderman et al., 2015). International teams have begun to identify genetic variants of small effect that correlate with behavioural traits, including educationally relevant traits such as years spent in education and cognitive ability, and to combine them in genomewide polygenic scores (GPSs) that explain small to moderate proportions of variance (Lee et al., 2018). Commercial companies are already using GPSs for screening purposes, albeit prematurely. Some have argued that there is potential for GPSs to be used within education, in conjunction with other assessment tools, to identify risk of learning difficulties (Shero et al., 2021), although this remains contentious (Asbury et al., 2021). It seems highly likely that GPSs will become increasingly available, but society is not yet sufficiently prepared to understand the implications of using them, and to put the necessary safeguards in place (Plomin & von Stumm, 2018).

Currently, the adult population has low levels of genetic knowledge and understanding of the aetiology of individual differences in behaviour (Chapman et al., 2019; Rew et al., 2010), and we know that this can have consequences for their beliefs about genetics. Chapman et al., (2019) suggest that comprehending genetic information “is becoming increasingly crucial for all aspects of our lives”, including job prospects and

educational attainment (Chapman et al., 2019:73). Adults, including students, have been shown to use knowledge of genetics to inform their health behaviours (Chapman et al., 2019; Donovan et al., 2021). It has also been found that developing young people's genetic literacy can support a reduction in false beliefs and biologically deterministic thinking in relation to social identity, culture, and race (Donovan et al., 2021). Chapman et al., (2018) also found those who were more informed about the genetics of complex traits were less likely to express deterministic or essentialist views. Indeed, Sokolowski and Ansari (2018) argue there should be a focus on understanding biological differences between individuals in order to magnify future learning potential, with long-term interventions based on this knowledge. However, little is known about younger children's views or understanding about genetic influences on individual differences in learning and behaviour. This is problematic because any decisions made about genetic screening for common disorders will directly affect children, and responsible research suggests their voices should be heard (Carrier & Gartzlaff, 2020). An understanding of children's views can help to shape policy decisions and offer insights that can benefit both science and citizenship education.

1.2. People are talking about screening DNA in Education. They say it could support early intervention and identify children with an increased likelihood of educational difficulties

It is important to know what children think about genetics because they are key stakeholders in discussions about DNA-based prediction of learning and behaviour differences. It is also important, in this context, to understand children's views of those they perceive as being different to themselves. This can enhance current understanding of the risks of stigma, self-stigma and detrimental expectancy effects that may be associated with DNA screening for an increased likelihood of experiencing learning and behaviour differences (Shifrer, 2013).

Our understanding of the risks of stigma, self-stigma and expectancy effects in relation to learning and behaviour differences can be informed by research into the impact of perceiving mental ill health as having a biological basis. Phelan (2002) suggests that understanding the biological basis of psychiatric conditions could dramatically decrease the stigma and negativity faced by people with mental illness. Phelan (2002) suggests that perceptions of mental illness are often linked to negative characteristics like being unstable, unhealthy, or threatening. This links with Becker's (1963) theory that people or groups who are different to the prevailing norm are socially labelled as 'deviant'. This can extend to family members who may also be targeted with blame, shame, and social distance from others. Phelan (2002) suggests that describing conditions from a biological stance could reduce tendencies to blame parents when their children experience difficulties. However, Phelan also acknowledged that this increases a 'within-person' medical model perception of conditions (i.e. it further emphasises that the problem is within the individual and should be cured). As our understanding of genetics has rapidly developed over the past decade, we have seen a growing disparity between science, education and public knowledge and attitudes regarding genetic language and terminology. This applies to learning and behaviour differences, as well as psychiatric conditions. Could redefining the language of genetics, and also diagnostic language, alleviate genetic determinism?

In addressing this question, Plomin (2019) argued that deterministic language and terminology such as 'disorder' and 'diagnosis' too often leads to an us versus them perspective which "is all wrong when it comes to psychological problems" (p. 58). Plomin (2019) suggests that all 'disorders' are in fact affected by "the extremes of the same genes that work throughout the normal distribution" (p. 58) and should be viewed as quantitative traits (ie how much of x one has), rather than qualitative traits (ie those you either have or do

not have). A diagnosis suggests that you either have something or not, rather than to what degree you experience a particular difficulty, be that mathematical processing or depression. He, and other behavioural geneticists argue that the “abnormal is normal” (p. 59). Within an educational context this approach could reduce the need for (potentially harmful) labelling and speed up the intervention process. It is possible that by identifying an increased likelihood of a child struggling in any aspect of learning or behaviour, using both DNA and behavioural data, more children can be supported to thrive in their education from the first days of school, or even earlier. While this is a case made by behavioural geneticists such as Plomin (2019), and supported by other organisations (e.g. Asbury et al., 2021) we know little about what children think about the prospect.

1.3. Children’s voices are not heard in that conversation

Knowing about children’s views of differences; their understanding and expectations of intergenerational transmission; and their perceptions of how wise (or otherwise) it is to use DNA screening as a basis for intervention could offer deeper understanding of how children would feel about a world in which we screened early for signs of difference and intervened to help (Shifrer 2013). Understanding what the impact of using DNA data to predict an increased likelihood of learning and behaviour differences would mean to children could be important, and little is currently known about this. However, we can draw upon a related body of literature regarding how and when children form essentialist and deterministic perspectives about difference, sameness, and inclusion.

It is important to know what children think and the research presented in this thesis makes a case for the importance of listening to children and young people in educational contexts, as key stakeholders in discussions about DNA-based prediction of learning and behaviour differences.

1.4. This is why that's a problem

In other contexts, such as legal, child protection, clinical and some educational contexts (Watkins et al., 2016; Cossar et al., 2016; Madden et al., 2016; Lundqvist, 2016), hearing children's views is recognised as having the potential to increase positive outcomes (Lundqvist, 2016). It is argued that listening to children's views is more than just "letting children speak" (James, 2007, p. 262) but also requires a nuanced understanding of how their ideas can inform social and other perspectives such as technology to support children (Ibrahim et al., 2021), and that children's perspectives may be different to those of adults, including parents (Cosgrove 2014; Lees et al., 2017).

Although children have the right to express their opinion about things which affect them (UN, 1989) their voice in educational settings still too often remains tokenistic (Sargeant & Gillet-Swan, 2019; Messiou, 2019) and oppressed (Gillet-Swan & Sargeant, 2018). This may be due in part to children being viewed as vulnerable (Aldridge, 2017) and the 'gatekeeping phenomena' (Gross-Manos et al., 2021; Lees, 2017), which may limit research with children and opportunities to elicit their views of sensitive and controversial topics such as DNA-based prediction.

Countering the 'challenging' circumstances, of school gatekeeping and being viewed as vulnerable, and allowing children to collaborate in their education, research, and policy (Howell, 2018, p. 484) could be a powerful way to "open up clinical research to more authentic findings about what matters to children and why" (Lees et al., 2017, p. 2173).

However, there are other challenges such as parental gatekeeping. An example of this, within clinical contexts, has been shown to limit the autonomy of the child's voice. Tait et al. (2017) compared the priorities of children and adolescents with those of their parents when considering taking part in clinical trials. Although the study was limited by a small sample ($n=55$) the findings suggested that children and adolescents' views and priorities

differed from what parents thought would be important to them; with implications for parents providing informed consent on behalf of their children (Hastings, 2022). This, Tait et al. (2017) viewed as important in terms of children giving assent and the “power differential between parents and children” (p. 373) which may affect the autonomy of decisions made by children. Again, this particular question is of value when thinking about an educational context, where parents are ‘gatekeepers’ to children’s decision-making experiences (Bourke & Loveridge, 2014; Miller & Nelson, 2006; Miller et al., 2017; Levenseller et al., 2014) and the opportunity of expressing their viewpoints about a potential future that includes genetic screening for learning and behaviour differences.

The issue of confidentiality and consent as a child has been identified as an ambiguous factor in many policies held by companies who offer direct to consumer genetic testing such as 23andMe and AncestryDNA (Moray et al., 2017). Indeed, Hazel and Slobogin (2018) surveyed the privacy policies of 90 direct to consumer testing companies which included 23andMe and AncestryDNA. Data derived from the surveys indicated that 65% of companies had policies regarding the use of genetic testing services for minors, 44% enabled parents to give authorization to participate in using the company services. Only 17% of the companies surveyed specifically declared that their service was not for children. However, 33% of company policies contained unclear and inconsistent guidance as to what constituted a minor’s age and vagueness as to whether parents could consent on behalf of the child. The study also indicated that almost 33% of the companies also “appeared to permit, or even encourage, consumers to submit the genetic material of others without their consent” (Hazel & Slobogin, 2018, p. 64). With unclear policy statements regarding the age at which children can consent to access commercial genetic testing services, companies who do offer these services, do so not knowing what the long-term psychological impact may be and how this data may be used in future contexts. Another important question is whether decisions

should be made on this basis at all? Do current polygenic risk scores actually tell us anything useful about individuals or just describe a snap-shot of populations?

Understanding how children comprehend genetic screening, which is already used to some extent within precision medicine, may also shed light on how children could potentially feel about screening for educational genetic screening for learning and behaviour differences, and whether knowing about potential risks this would create a psychological burden.

Indeed, these ethical questions have been raised by The American Society of Human Genetics (ASHG), and the American College of Medical Genetics and Genomics (ACMG) have published a joint statement with regard to genetic testing of children and adolescents (ACMG, 2015). This statement raises many legal and ethical questions which are highly relevant to education and to how polygenic scores such as EA3 could be used. It recommends exploring the reasons for predictive genetic testing in adolescents and children, suggesting that research be undertaken to understand the psychological burden of knowing genetic risks, and restricting genome sequencing to a defined amount of genomic information. The ASHG raises questions about pre- and post-screening counselling, and concerns about how information is interpreted by individuals and how valid the tests are in the first place (p. 11).

These questions are priority areas identified by the National Human Genome Research Institute, Ethical, Legal and Social Implications Research Program (ELSI) from a practical, psychosocial, ethical, and legal perspective (McEwen et al., 2014). This thesis elicits and considers the views and understanding of children about other children with special educational needs and disabilities (SENDs), and of DNA-based screening of infants for an increased likelihood of experiencing SENDs. It explores perceptions of labelling as well as prediction. There is lots of talk about the need for a conversation about genetics in

education, particularly in the media (Conley et al., 2021; Krapohl et al., 2014) as well as in academic journals (Asbury, 2015; Panofsky, 2015; Sabatello, 2018; Thomas et al., 2015) but no evidence of children's voices being elicited or heard in that conversation. This seems wrong when children and young people may be affected by decisions in major ways. The research presented in this thesis addresses this issue by focusing on asking young children what they think about the genetics of human traits and behaviour in age-appropriate ways to ensure they have a voice in debates about this contentious area of science and education.

1.5. Rationale for study - How the programme of research presented in this thesis will address that problem

How children perceive difference is important because research may show that intervention has the potential to alter children's attitudes, tolerance, and acceptance of others who are different to them. It is important to understand children's attitudes towards screening infants for an increased likelihood of SENDs in order to understand ways in which such an approach might prove harmful or helpful. It will be highly important to consider whether identifying DNA-based risks of learning and behaviour difference would ameliorate or worsen the current negative climate in English primary schools, where children who are identified as having SEND differences often do not gain 'social acceptance' from peers in the classroom (Broomhead, 2019).

Currently we know little about younger children's views or understanding regarding genetic influences on individual differences in learning and behaviour, or about a possible future in which DNA screening for such traits could be used (Asbury et al., 2021). This is problematic because any decisions that are made about genetic screening for an increased likelihood of common conditions will directly affect children. Responsible research therefore demands that their voices should be heard in discussions about the future of genetic screening (Carrier and

Gartzlaff, 2020). An understanding of children's views can help shape policy decisions and provide insights that will benefit both science and society.

1.6. This is how the programme of research presented in this thesis will address that problem

By eliciting and amplifying children's voices educational practitioners could help to provide a platform for children to express their views (Wall, 2017) and mediate between national educational policy and children's perspectives and the things that are important to them (Murray, 2019). The current study uses innovative methodologies (Lees et al., 2017) such as Philosophy for Children (P4C) and age-appropriate data collection tools (Lees et al., 2017) to ask children about the potential use of screening for learning and behaviour differences. Matthew Lipman originally established philosophy for or with children (P4C) in 1970. He was motivated by the work of psychologists such as Vygotsky and the philosopher Socrates in the development of "philosophical dialogue within a community of inquiry, which constitutes the essence of P4C". (Daniel et al., 2011). The Philosophy for Children (P4C) goal is to enable children to listen to the views of other children and to support children to give their views in a logical, reflective manner in collaboration with others. Anderson (2016) explains how important P4C is for confronting beliefs with regard to understanding and ideas, particularly with regard to others in the P4C group and beyond. In 1992 the Society for the Advancement of Philosophical Enquiry and Reflection in Education (SAPERRE) began to promote and advocate the use of P4C in schools in England. The main value and idea behind the use of the P4C approach is to promote a desire to know, develop analytical thinking skills and cultivate reasoning and discussion with a view to increasing children's knowledge and understanding. The four kinds of thinking classified by SAPERE as effective when using P4C are, Caring thinking or listening, Collaborative thinking or

responding and supporting with reason, Critical thinking or responding and challenging with reason and Creative thinking or connecting and suggesting with reason (Anderson, 2016).

The current study uses P4C as a tool for supporting children to express their views and to respond to stimuli and to the views of others. Using this research-informed way of eliciting children's beliefs and reasoning via dialogue is a novel approach to understanding the development of children's thinking about difference and its aetiology. Using this approach, the aim was to enable children to listen to the views of other children and to support them to give their views in a logical, reflective manner in collaboration with others.

1.7. Aims and Research Questions

To my knowledge, this is the first study to ask children as young as four what they think about a future in which adults could potentially screen infants for their increased likelihood of learning or behaviour differences. The study was designed using child-friendly methods to elicit very young children's understanding of the aetiology of learning and behaviour differences, and their perceptions about screening for an increased likelihood of them at birth. It was also designed on the understanding that responsible research and innovation requires us to listen to children's views when planning the future use of DNA-based data so that we can (a) establish principles to avoid harm, (b) put appropriate regulation in place that aligns with children's perspectives (Convention on the Rights of the Child 1989) and c) hear and act upon children's views under the age of 10 years, as key stakeholders in these discussions (Bradwell, 2019).

The study presented in this thesis addresses the following research questions:

- a) How do primary school children view learning and behaviour differences, and to what extent can a brief Philosophy 4 children (P4C) intervention change their feelings, behaviour or thoughts?

- b) Do children think it is important to predict learning and behaviour problems and do they think genetic screening has a role to play in this?
- c) What can a P4C discussion teach us about children's understanding of the origins and implications of being different?

1.8. Structure of the thesis

Chapter 2 presents a review of relevant literature; Chapter 3 explains the methods used in the study; Chapter 4 presents the quantitative results; Chapter 5 presents the impact assessment and process evaluation for the P4C intervention trial; Chapter 6 presents an analysis of qualitative data on children's perceptions of difference and DNA screening and Chapter 7 presents an analysis of qualitative data on children's understanding of the origins and implications of being different. Finally, Chapter 8 presents a general discussion of the study's findings.

Chapter 2

2. Literature Review

The aim of this literature review is to describe research findings regarding how children who do not have diagnosed Special Educational Needs and Disabilities (SENDs) perceive those who do. This focus is essential to a study which asks how children perceive those who are different to themselves, and what they think about a possible future in which we could use DNA data to predict an increased likelihood of experiencing special educational needs and disabilities. There will be a particular focus on children's voices, the core focus of this PhD research, and studies from around the world will be discussed in the context of UK policy and practice. This study aims to understand the factors that affect the attitudes and perceptions of primary school aged children, and to understand whether perceptions are more commonly the result of observing learning and behaviour differences within the classroom environment or social referencing (Huber et al., 2018).

The following sections of this literature review explores studies of children's perceptions of the genetic inheritance of complex traits, and their association with child behaviour and decision-making. Understanding how children comprehend genetic screening, which is already used within precision medicine, may also shed light on how children could potentially feel about screening for educational genetic screening for potential learning and behaviour differences, something that may be on the horizon (Asbury et al., 2021).

It is suggested that very young children's experiences of being socially accepted, and the development of peer friendships, can affect their long-term development (Broomhead, 2019). Being different has been found to negatively affect being accepted by peers (Broomhead, 2019). Typically developing children have also been shown to be unwilling to interact with peers with physical differences such as needing to use a wheelchair, or when there is a hidden difference, such as a type of neurodiversity, which manifests in reduced or unusual social skills (Woodgate et al., 2019). How children's attitudes to those with learning and behaviour differences are developed and how they – and society more broadly - categorize and labels groups and individuals (labelling theory) is discussed below.

2.1. An Overview of labelling theory and its application

A label has been “defined as a descriptive word or phrase applied to a person, group, theory, etc. as a convenient generalized classification” (Collins English Dictionary, 2019). In a school context, pupils can be informally labelled (e.g. as sensible, hardworking, inattentive or struggling) or formally labelled (e.g. with ‘disorders’ such as ASD, ADHD, dyslexia or dyspraxia). Labels can be positive or negative and, when they are formal, usually have consequences, which may also be positive or negative.

Becker (1963) focused on how society identifies and labels ‘deviance’ and argued that “all social groups make rules” (p. 89) and that those who do not comply with a group's social norms are excluded and labelled as “deviant” (p. 121). His labelling theory suggests that society (the group) decides which types of behaviour do not conform to social rules and therefore which types of behaviour require labels. He argued that the “deviance” (p. 134) label can occur even when rules have not been broken, when there is a suggestion of medical affliction or difference to an accepted norm.

Bernburg (2009) argued that being labelled as deviant affects the self-concept and that individuals who are labelled in this way can develop a negative self-concept and stereotypical behaviours linked to the label they have been assigned. Those labelled may feel stigmatised by others and, in turn, stigmatise themselves. This raises the question of whether using labels to define Special Educational Needs and Disability (SEND) within an education context may have a similar impact as the ‘deviance’ labels that Becker and Bernburg discussed in a criminal context, generating both stigma and self-stigma? Being categorized or labelled with a difference may also perpetuate negative perceptions held by typically developing children. Consideration must therefore be given to the impact that screening DNA for learning or behaviour differences might also have on children’s perspectives of differences.

2.2. What we know of typically developing children’s views of children with learning and behaviour differences

There is little extant research regarding the attitudes of children without disabilities towards disability in their peers and in the wider community (Beckett, 2014; Cairns & McClatchey, 2013).

Beckett (2014) investigated non-disabled children’s views (Year 2, 6-7 years and Year 6, 10-11 years) about impairment and about how people with disabilities are constituents of our communities. Focus group conversations and mind mapping exercises demonstrated that non-disabled children are chiefly committed to portraying a sequence of “hegemonic schemas” (p. 856), legitimising norms and ideas about disability, which perpetuate the powerful status of not being disabled themselves. Children within the study saw illness as being correlated with disability:

The person who’s disabled is not healthy, not really healthy and someone who is not disabled is really healthy. (Girl, Year 2, School C; original emphasis) (Beckett, 2014, p. 866)

Beckett (2014) suggested that their views represented a medical rather than a social model of disability. This medical model of disability is bolstered by some of the aids which support disabled people, such as wheelchairs or medical treatment. Year 2 children in the study viewed the term disability to mean that you couldn't accomplish things:

... a person that's 'okay' and a person that is 'disabled', right, they can't do the same things, because it's different. And the disabled person can't do any- thing and that person [non-disabled person – ed.] can do things. (Girl, Year Two, School B; original emphasis) (Beckett, 2014, p. 866).

Beckett's (2014) study also highlighted how certain television programmes had developed children's understanding of what 'normal' and 'abnormal' looked like. When discussing in focus groups what it would be like to have a child with a disability, after viewing TV programmes like Channel 5's My Shocking Story series and Channel 4's BodyShock series, Year 2 discussions highlighted this:

because maybe your friend's got a nice, normal one', and the baby 'didn't come out how they wanted them because they wanted them to be normal and not disabled' (girl, Year Two, School A) (Beckett, 2014, p. 870).

Through discussions children also emphasised their perception of differences between 'normal' and 'non-normal' people (Beckett, 2014), highlighting the negative perspectives that the children in the study had about disability. However, Beckett (2014) also observed that children's comments suggested a capacity to question and change these views, and therefore made a case for the importance of educating children about disability in schools. This is explored further in the research presented in Chapter 7.

Litvack et al. (2011) explored the beliefs held about disability by children with special educational needs (SEND) themselves, and children in mainstream inclusive classrooms. Findings indicated no differences in responses between children with and without SEND, with all children declaring a more positive view of children with cognitive difficulties than with behavioural difficulties. The authors noted the challenges that can be faced by children in mainstream inclusive classrooms when children with disabilities display inappropriate, or disruptive, behaviour. Classmates' views tended to be shaped by their experience of disruptive behaviour rather than by labels. Litvack et al. (2011) argues that:

if ability is not a key predictor of attitudes toward disability, interventions sensitizing a specific group of children based on their achievement level should not be necessary (p. 485).

Indeed, the study suggests parents and teachers consider discussing unseen differences with peers in the classroom (Litvack et al., 2011) in order to reduce negative views of peers about children with hidden disability. This aligns well with findings from the Circle of Friends (Gus, 2000) study which will be described later in this chapter. Could this approach support acceptance of difference and reduce the need to label differences, through the education of peers?

Children's attitudes towards disability have also been explored by Cairns and McClatchey (2013), in a study comparing two Scottish schools, one with a high level of children with additional needs and the other with only a few. By comparing the two it was hoped to gain a deeper understanding of whether children with greater experiences and understanding of others with additional needs would be more positive towards inclusion and disability than those who had limited experience and understanding. The study design and materials consisted of children in both schools being shown six video clips of children and a

teacher with various differences ranging from cerebral palsy, deafness, Down syndrome, wheelchair user and a teacher who is deaf teaching hearing children. After being shown the clips, children were asked a series of questions relating to their views about having a child with differences in their class. Results indicated that participants in the school with more children with additional needs showed more acceptance and positive attitudes than the school with limited inclusion. This particular study highlights how through learning together and sharing experiences non-disabled children may be able to develop positive and empathetic attitudes towards others with differences. As one child from the inclusive school pointed out:

‘it would be fun because we could play and race with him’ and ‘it looks like fun spinning in his wheelchair (Cairns & McClatchey, 2013, p. 128)

The idea that learning and working together can foster positive and inclusive attitudes was described by Black-Hawkins et al (2021) who investigated children’s perspectives to support the development of more inclusive classrooms. Using a ‘Framework of Participation’ and group discussions with 56, 4- to 11-year-old children, this study investigated questions about children’s views of diversity, and about how being the same or different to others impacted on their learning. Children’s discussions indicated that younger children made reference to physical differences but that there was very little talk about SEND or disability making children different or impacting their learning. Older children expressed respect for all individuals in their class and referred to being in a class family (Black-Hawkins et al., 2021). These perspectives have also been identified by Disability Rights UK and Centre for Education and Youth (CfEY, 2019). Findings suggest that listening to children’s views is important for research but can also help to develop community spirit within the classroom. This particular view would support interventions based on developing discussion and listening to children’s views around the misconceptions of difference.

Indeed, Petry (2018) indicated that interventions to support awareness of differences would be needed to ensure the social inclusion of children with differences, but also different types of intervention as behaviours of typically developing children were moderated by the type of disability or difference they were discussing.

One of the consequences of children being viewed negatively as a result of exhibiting behaviour considered to be ‘different’ is that the potential for developing healthy peer relationships can be affected. Thornberg (2018) gathered ethnographic data in three Swedish primary schools. Data from interviews and field notes demonstrated a deficit model of inclusion in these schools and showed that if children appeared different – if they were seen as being odd or a misfit - it was often concluded by peers that these children were not part of their social group. In turn, these children were given informal labels which were sometimes stigmatizing, malicious, unkind, and bullying. Children were targeted for being obese, not wearing the right clothes, not being athletic in skills and looks, ethnicity, faith, mental and physical disability. This study indicates that not fitting into the social group norms was the main criteria for bullying rather than a label. Understanding the source of negative perceptions is an important step towards tackling them. We need to explore whether screening for such differences might just add more ammunition for others to use to target those with diagnosed differences.

2.3. Could intervention affect children’s perceptions of learning and behaviour differences?

Schwab (2017) argues that just putting children with and without differences into the classroom together does not bring about additional positivity towards those with differences. Developing better attitudes, through disability awareness intervention, may prove effective (Petry, 2018).

Armstrong et al. (2017) meta-analysis reviewed the effectiveness of interventions aimed at reducing prejudice from peers against children who have disabilities. Synthesised data indicated that face to face contact with disabled people, and extended contact, through reading story books about disability effectively supported the development of a positive attitude towards disability. The twelve studies fitting their inclusion criteria identified the types of contact that supported increasing a positive attitude towards disability, the most frequent of which - direct contact (five studies) - involved discussion of disability with disabled people, working together on projects and participating in sporting activities. Three studies involved parasocial contact through viewing videos of disabled people or puppets talking about their experiences: with a further two studies using extended contact through the use of reading material depicting positive interactions between disabled and non-disabled people. Armstrong et al., (2017) concluded that the interventions which enhanced children's attitudes about differences included direct, extended and guided imagined contact. Armstrong et al., (2017) advocate that disabled children and neurotypical children should work together and that this could improve children's attitudes towards differences. This perspective is also reported by Godeau et al., (2010) study, which indicated 12- and 13-year-old participants had a more positive attitude towards disability after intervention in a randomised control trial (RCT), using The Chedoke-McMaster Attitudes Towards Children with Handicaps Scale (CATCH) measure. Chapter 4, of the current thesis, uses an RCT design and the updated CATCH measure (Armstrong et al., 2017) to elicit the effectiveness of using extended guided contact and resources (storybooks, puppets, video and Philosophy for Children sessions) in a primary setting to influence attitudes towards disability.

Children effectively working together was found in a study promoting peer empathy towards an autistic child. Gus (2000) found that providing appropriate factual information about a child's diagnostic label, through a Circle of Friends intervention, enabled peers to

connect particular behaviours to autism. It was noteworthy that peers, who did not know about autism could nonetheless accurately describe the behaviours they found hard to accept. The study indicated that peer attitudes became more positive as a result of the Circle of Friends intervention and that this change was sustained over the next two school terms (Gus, 2000). Good education about a label and its implications appears to have been helpful in this instance, providing children with an explanation for behaviour they otherwise found difficult to accept. This concept supports the view of Riddick (2000) who suggests that peers know about other children's difficulties not because of labelling but because they witness them. The labels, in themselves, are not the problem and may in fact be helpful. This suggests that there could be stigma, stereotyping and discrimination before labelling is ever attached to individuals, and that the label is not the trigger for stigma and may, in some cases, help counteract it. Chapter 6 in the current study asks for children's perspectives about being born with learning and behaviour differences and if children perceived screening for these differences would be helpful or harmful. Their views could also shed light on whether screening for these differences would be useful if DNA screening of all children were to become the norm, which some experts in the field say it will (Plomin & von Stumm, 2018; Plomin, 2019). Would educating children about learning and behaviour differences at an early age reduce stigma and increase tolerance and acceptance?

The first part of this literature review has discussed the small body of available research on how children without diagnosed differences view children with learning and behaviour differences. Findings seem to point towards a need for schools to ensure that children, with and without diagnosed differences, are provided opportunities to build and develop meaningful communications with their disabled or neurodiverse peers. There are signs that interventions to develop typically developing children's understanding of differences can

have a positive impact on attitudes towards disability (Woodgate, 2019, p. 23; Fafazza & Odom, 1997).

The review suggests that children without diagnosed differences are more tolerant of cognitive or learning differences than of behavioural difference, and that intervention to change perceptions at an earlier age could be beneficial for all children's social and emotional development (Taylor et al., 2010; Fafazza & Odom, 1997). It is clear that there is a need to know more about the social and psychological effects of being perceived to be different, particularly from the typically developing child's perspective. It is also apparent that there is a need to find out how children would feel about screening for learning and behaviour differences before there is any visible signs that there are any.

2.4. Children's voices

Knowing about children's views of differences; their understanding and expectations of intergenerational transmission; and their perceptions of how wise (or otherwise) it is to use DNA screening as a basis for early intervention could potentially offer deeper understanding of how DNA screening may impact children's perceptions of differences, for example, stigma and self-stigma and detrimental expectancy effects (Shifrer, 2013). Understanding what the impact of using DNA data to predict an increased likelihood of learning and behaviour differences would mean to children could be important, and little is currently known about this. However, there is a related body of literature regarding how and when children form essentialist and deterministic perspectives about difference, sameness, and inclusion.

2.5. Children's perceptions of genetics

Although the predictive power of genetics is not yet sufficiently strong or reliable to have practical utility (e.g. Morris et al., 2019), this review aims to understand the views of children and adolescents who have already experienced a genetic diagnosis, in an attempt to foresee the possible psychological, practical and social difficulties which may arise from identifying complex traits and children being identified as having an increased likelihood of educational 'disorders' or 'special needs'. It is important to note that this part of the review is not claiming that the genetics of complex traits will work, or should be responded to, in the same way as simple single gene disorders but simply seeks to use the 'related' context of single-gene disorders for evidence of what works and does not; and what is known and is not so that possible solutions may be found in the future use of DNA in personalised precision education. There is a gap in the literature in relation to children and young people's perceptions of the genetics of complex traits which the current PhD research is designed to partially address.

There is very little research on children's perceptions of genetic influences on complex traits, and those studies that exist relate to clinical contexts. This section of the literature review presents and discusses the extant research as a precursor to investigating children's perceptions of genetic influences on more complex educationally relevant traits related to learning and behaviour. The conditions that have been studied from a child's perspective to date range from Huntington's Disease, where risk is identified on the basis of family history and confirmed by genetic testing, through to more complex traits including Type 2 Diabetes (T2D) and breast cancer (MacLeod et al., 2014; Bradbury et al., 2012). This literature review makes a case that it is important to know what children think about the genetics of educationally relevant traits because if we can explain diagnoses, and also their aetiology, this may further enhance understanding and acceptance.

Stereotypical information and deterministic beliefs about genetics and genetic testing can lead to a lack of accurate societal knowledge which may affect child and adult beliefs about the usefulness of pre-symptomatic genetic testing. Chapman et al. (2018) found that “overall genetic knowledge was poor” (2018, p. 73; Rew et al., 2010) and suggested some actions to support societal “genetic literacy” (Chapman et al., 2018, p. 81). These included genetics teaching for teachers, physicians, psychologists, and the media. Findings from this study indicated that higher levels of genetic knowledge were associated with lower levels of genetically deterministic thinking. Strategies outlined in this study could potentially affect how genetics is perceived by children within education, by increasing parent and teacher knowledge and understanding of genetics. Developing a greater understanding of how genetic information could be used (and also its limits) could perhaps also have an impact on the development of personalised learning strategies. Arguably, enhancing genetic literacy in children could have an even more sustainable effect than focusing on adults.

2.6. What do we know, what can we learn from children’s perspectives of inherited (single-gene) disorders?

In a recent systematic review of 20 studies of children’s views of inherited conditions McGill et al. (2018) identified gaps in child and adolescent knowledge about genetic testing. This review included data from 1811 participants aged between 6 and 21 years of age and also looked at their attitudes to genetic testing. The review identified a “basic understanding of inheritance” (McGill, 2018, p. 20) among children and young people at ‘population-level risk’ i.e. those without family risk indicators or a diagnosis (n=1498) but suggested that “they may lack deeper knowledge of concepts related to genetics and genetic testing” (MGill, 2018, p. 20) due to age and development. Those children who were ‘at risk’ or diagnosed with genetic disorders (n=313) perceived their genetic status from observing family members diagnosed with conditions and further developed from listening to family explanations of

genetic inheritance. McGill et al. (2018) argued that this may have led to the development of inconsistencies in their genetic knowledge, fuelling misconceptions about genetic inheritance, rather than perceiving their increased likelihood of inheritance on the basis of a sound understanding of intergenerational transmission of genetic disorders. The summary indicated that children, whether at population-level risk, or being diagnosed with, or an increased likelihood of, a genetic condition were amenable to taking part in clinical genetic testing. However, the majority of these studies raised concerns about possible ramifications of screening, such as the psychological effects of testing positive and negative for certain conditions. These effects ranged from worry, regret, and stigma to how identification of risk may alter friendships (McGill, 2018). However, it is interesting to note that these concerns were not reflected in children and young people's responses. The review makes a case for the need to identify the age when children develop knowledge and understanding of genetics so that age-appropriate counselling can be provided to support children and facilitate discussions of the significance of genetic testing where needed. This is with a view to developing better informed intervention based on children's "mode of inheritance and clinical trajectory" (McGill et al., 2018, p. 21) and their experiences of current provision. Within an educational context, the use of genetic testing and using data to inform personalised learning strategies could potentially transform how children are identified and supported, not just children with a 'diagnosis' but all children. Indeed, Sokolowski and Ansari (2018) argue that there should be a focus on understanding the biological differences between individuals in order to magnify future learning potential, which ultimately should be continuous and long-term interventions based on this knowledge. Again, it is important to reiterate that this is not currently possible, and this research is designed to build our understanding of what children and young people think in order to inform developments should this become possible in the future as predicted by leaders in the field (e.g. Plomin, 2019; EIF, 2021).

2.7. What do we know and what can we learn from children’s perspectives of inherited (single-gene) disorders? - Counselling

Godino et al. (2016) review indicated that young people’s experiences of pre-symptomatic counselling were both positive and negative. These differences depended on the type of condition being tested for. A positive outcome was the view that being tested may change the direction of a condition which had resulted in the deaths of family members. A negative aspect of the counselling was having to wait until the psychologist felt the young person was ready – this was reported as leaving the person with a “feeling of disempowerment raised by uncertainty” (Godino et al., 2016, p. 501). Although ethically young people are supposed to be able to make an autonomous choice when deciding to undergo genetic testing the study indicated that parental involvement coerced young people by applying pressure to be checked for the sake of another family member. In doing so, this left young people with inadequate authority over their own decision making. This study raises questions, from an educational perspective, that if DNA screening for an increased likelihood of learning difficulties were to become routine in the future, would children have the option to say no to screening? Would they feel empowered to cooperatively make choices about their learning based on this information? Would they experience negative social and emotional effects from such knowledge? Could using this type of risk indicator end up becoming another euphemism (Gernsbacher et al., 2016) in an already complex SEND support system which could lead, inevitably to remain with the status quo, of ‘done to and not with’. It is important to answer these questions by asking the children themselves.

2.8. What do we know and what can we learn from children’s perspectives of inherited (single-gene) disorders? – Testing

Godino et al. (2016) undertook a systematic review of 11 peer-reviewed papers investigating the effects of young people choosing to undertake pre-symptomatic testing. The 11 papers which met the research criteria yielded five strong themes, namely the time period leading up to testing, genetic counselling offered, how results of the testing were disseminated to the young people, how young people came to terms with living with genetic risk and finally how and who was involved in the decision-making process. The review indicated that one study by Mand et al (2013), explained how “choosing to undergo testing constituted a major life event, so important that participants reported it had a significant impact on their outlook and sense of self” (Godino, 2016, p, 500). This effect on identity, or sense of self, is a particularly important issue to consider when contemplating DNA screening for complex and educationally relevant traits in children.

Investigating adolescents’ choice to undertake predictive genetic testing, based on family history Mand et al. (2013) collected detailed narratives from nine 16-17 year olds regarding predictive genetic testing for adult-onset diseases, for example familial cancers and Huntington Disease. Of the nine participants taking part in the study, six had already received positive results. Interviews gave insight into three areas which included how life was prior to testing, the difficulty in getting tested and coming to terms with the notion of diagnosis (Mand et al., 2013; Forrest et al., 2015). This study also indicated that those who seek to be genetically tested are more likely to display a more positive psychosocial outlook (Mand et al., 2013; Duncan et al., 2006). When receiving either positive or negative results the participants remembered acknowledging it positively:

I felt like I was a little more complete after finding out because I actually knew, knew the answer to something that I’d assumed about myself but wasn’t sure.”

Alice: HNPCC: 16+ve: 20 (Mand et al., 2013, p. 646)

Mand et al (2013) also illustrated that young people encountered a blow to their developing self-awareness but also their long-term perspectives:

It was an anxiety sort of feeling, not knowing... just not knowing was the worst I guess for me... I was just wondering all the time whether I had it.

Emma: BRCA1: 16+ve:20

... She said that your mum's got it and you have a chance of getting it as well That was the day the clock stopped; that was the day the uncertainty began.

Amelia: HD: 17-ve: 18 (Mand et al., 2013, p. 644)

Indeed, Mand et al. (2013) small but in-depth study also reported how, when receiving a negative genetic result, adolescents expressed varying emotions such as:

It was like everyone else was more excited than I was, but for me it was like I had been wrong all this time ... for the first few weeks I was in shock that I didn't have it.

Cate: HD: 16: -ve: 17

The impact on adolescent girls' self-concept was also illustrated in a study by McConkie-Rosell et al. (2008) when investigating the effects of testing for genetic risk for fragile X syndrome in ($n= 53$) girls aged between 14-25 years. Data was gathered using the Tennessee Self Concept Scale (TSCS:2) and guided interviews. Data derived from interviews indicated that all three groups of girls (carrier, non-carrier and at risk to be carrier) all shared similar feelings when realising they could be carriers. These feelings included feeling sad, worried, scared and upset. After testing, when the girls' status was confirmed,

'carriers' expressed emotions conveying upset and reluctantly 'giving in' to being unable to change the diagnosis:

Carrier (age 18 years)

I guess I'm more worried. It's like if I were to get married. How do I tell my husband or like my fiancé or boyfriend you know when I'm much older. Like how would I tell him if we have kids, it might not turn out so good.

Carrier (age 16 years)

Um, I didn't really feel sad or anything. I mean, to me, it's just the way things happen. I didn't really feel sad or angry or mad. I mean, of course, I wasn't happy, I was just, well, it's genetics, it's just nothing I can do about it, so I just accepted it naturally. ... I don't really have any hate or anger towards it, I mean, it's just part of who I am and it makes up part of who I am, so. (McConkie-Rosell et al., 2008, p. 7)

And those girls who were at risk to be a carrier expressed further uncertainty about the increased likelihood of being identified as a 'carrier':

At risk (17 years)

Um, it could be bad, but again, still, I don't really know very much about what I'm going to do, so, it's still is kind of information that's waiting to be used, but not being used right now. (McConkie-Rosell et al., 2008, p. 7)

When thinking about how being diagnosed as a carrier of fragile X 65% of ‘carrier’ participants explained that knowing about their genetic risk status had not affected ‘who they were’:

Carrier (17 years)

I don’t think it’s made me look at myself really differently. “I’m so horrible” or anything like that ... (laugh)” (McConkie-Rosell et al., 2008, p. 7)

However, conversely some ‘carriers’ and a larger number of ‘at risk’ participants explained that knowing their genetic risk status had affected them negatively. This was reported to be due to having the ‘at risk’ status which they perceived as having an effect on friendships and their sense of self. The study concluded that those who had a diagnosis of ‘carrier status’ and knowing about genetic risk status for ‘carriers’ enabled participants to “compartmentalize” (McConkie-Rosell et al., 2008, p. 13) the status as only a fragment of their whole self. Indeed, all the ‘carrier’ participants recognised that as their status was unchangeable, it was not their fault and they were not able to do anything about it. This view had a positive effect on those participants. This is important to consider when considering DNA screening for learning and behavioural disabilities as only an indication of probabilistic risk could ever be achieved for these complex traits.

McConkie-Rosell et al. (2008) concluded that enabling the young girls to find out their genetic carrier status for fragile X syndrome had given them the chance to think about and begin to formulate their ideas about how they would confront and handle their diagnosis. Because of the ambiguity and unknown element of the ‘at risk to be a carrier’ status, those girls diagnosed seemed to demonstrate “greater uncertainty” (p. 16) about perceptions of themselves, the chance of carrying the gene and difficulties with friendships. This particular

concept could be related to being at an increased likelihood of having learning or behaviour difficulties within an educational context. Could this same genetic 'risk of' uncertainty be a difficulty for the development of the self in very young children? Or could earlier identification of risk and implementation of support strategies such as counselling be a positive move forward?

Being able to reduce uncertainty and worry and also make lifestyle choices was also noted by Alderfer et al. (2017) in gathering the perspectives of 12-25 year olds being genetically tested for Li-Fraumeni Syndrome. This qualitative study gave new insight into the experiences of adolescents living with this:

familial cancer predisposition syndrome with core tumors that include soft tissue and bone sarcomas, premenopausal breast cancers, brain tumors, leukemia, and ACC's. A broad range of other tumors affect individuals from childhood through adulthood, and are characterized by their significantly early age of onset (Kamihara et al., 2014, p. 660).

The study sought answers to very sensitive questions which ranged from the perceptions of the participants' cancer risk, whether adolescents and children should be offered testing, using their own experience of testing to give an opinion as to whether children should be allowed to make decisions about being genetically tested and their feelings about cancer monitoring. Data from the interviews regarding knowing their risk status confirmed that half of the 12 felt that knowing helped them to come to terms with it:

I really wanted to know whether or not I had that [the mutation], so that I wouldn't have to worry anymore about if I had it or not (12-year-old).

I was a little worried, but then I got over it and I was like okay, I'm all right now and now we know that I can be checked up. (15 year old). (Alderfer et al., 2017, p. 1110).

The advantages of testing apart from reducing worry and anxiety were participants felt knowing they could alter the disease onset by trying to be physically fit and eat healthier diets. Also seen as an advantage, of knowing risk status, it would enable them to take part in screening programmes to detect changes earlier:

... it shows what kind of genes you have and the risk of when – like if you might get a disease. It tells the doctors in advance so they can fix it maybe, or give a treatment for it. (12-year-old). (Alderfer et al., 2017, p. 1110)

When children considering if children should be able to decide whether or not to undertake genetic testing it was generally agreed, by the participants in Alderfer et al. study that those children between the age of 10 to 15 should have a say, but children younger than the age of six should not, as they would not have developed the understanding (Alderfer et al., 2017). One participant commented:

... if you told someone who was six, they wouldn't get it at all, ... but once they're nine or ten, I think they would understand what's going on, (12 year old) (Alderfer et al., 2017, p. 1111).

This comment does beg the question, what about those children aged between 6 and 9/10? The study concluded that there were practical implications such as the provision of developmentally appropriate counselling and information regarding the risks and benefits of testing. The view of the adolescents however, regarding the age at which children can make informed choices, differs from research in many contexts where children as young as five can make decisions, as long as the context and discussion has meaning for them (Singh, 2012;

Landsdown, 2005) However, the view of age-appropriate counselling may also be a positive way forward when thinking about diagnosing ‘educational risk’, but would need to be carefully considered as the implications of providing resources such as genetic counselling could be costly for schools (Sibieta & Belfield, 2018). This is particularly important when DNA screening could only ever indicate probabilistic risk – similar to socio-economic indicators such as free school meal eligibility – rather than providing diagnostic facts as would be the case with a single gene disorder.

2.9. What do we know, what can we learn from children’s perspectives of inherited (Single-gene) disorders – Receiving Results

When young children received results of genetic tests for conditions like Huntington’s disease or inherited cancer, Godino et al. (2016) review indicated there tended not to be negative emotive responses to the test result itself but, rather, mixed emotions. In all cases, within this small study, the participants felt it was the right choice to know the outcome of testing. Those who received a positive outcome felt “able to move forward and to understand what was important (or not) in their lives” (p. 501). For some, however, the positive result led to anxiety which was associated with worrying about probable gossip from others, employment worries, passing on the difficulty to prospective family and not having the same result as other relatives. The following views and emotions exemplify their reactions:

...when I first found out I didn’t want to be too happy around them because it’s still not the best of situations because my mum’s still poorly with it so even though its good news for me, I couldn’t be too happy. I’m still upset about my mum.’ M 24, test negative, FCM.

when I got told I didn’t, I mean there were tears of happiness, but then for my sister as well, I felt really bad for her then... I’ve had times when I’ve really thought about it and I

have got upset. The fact that my sister has got it and I haven't and I always think to myself what does she feel about me now because I haven't got it and she has.' F, 22, test negative, HD (MacLeod et al., 2014, p. 399).

Godino et al's (2016) review highlights important issues such as how and when young people are informed of their genetic risks and indicates that many children know of the potential risks of inheriting conditions many years before there is any discussion of pre-symptomatic testing through family discussion. Godino et al. (2016) indicate that "appropriate communication of genetic risk information by parents to their children is highly desirable, since it has been shown to have long-term consequence in terms of reproductive decision-making" (p. 502). This argument, although extremely important within a clinical setting, would not be a relevant consideration for complex traits, not least because of pleiotropy, the phenomenon in which one genetic variant may have multiple diverse effects. However, the clinical view of harnessing parental communication to discuss genetic risk information could also be adopted within an educational paradigm, as effective, knowledgeable communication between parent and child about the identification of educational genetic risk factors could alter deterministic views and enable personalised learning strategies to empower children to take ownership of their learning potential.

The impact and consequences of knowing about complex traits and being at an increased likelihood of learning difficulties from an educational context is likely not to be as life altering and extreme as some of the previously discussed cases like Huntington's Disease, but knowing your risk status could potentially enable those children, within an educational context, to reduce anxiety and worry about the possible risk diagnosis and be able to make choices about how they respond to the potential of being at an increased likelihood of developing learning difficulties. The potential downside of diagnosing risk may exacerbate possible stigma and self-stigma that children may already perceive and could lead

to detrimental expectancy effects (Shifrer, 2013). This will only be worth it if there is confidence that risk scores have genuinely causal and substantial effects and that something specific can actually be done to counteract the risk, which is certainly not (yet?) the case (Morris et al., 2019).

2.10. Does labelling/diagnosis/data lead to behaviour change in inherited (single-gene) disorders?

Investigating young people's perspectives of support offered by counselling services in America, Pichini et al. (2016) conducted 11 exploratory interviews with children aged between 12 and 18 years of age. The adolescents had previously been diagnosed with inherited single-gene disorders: Stickler syndrome, Neurofibromatosis type 1, Hemophilia B, Cystic fibrosis, Bartter syndrome, Autoimmune polyglandular syndrome type 1, Alport syndrome and 3M syndrome. The study data derived that, apart from key themes regarding counselling services being offered, participants described the importance of understanding the genetics of their conditions and why this may have occurred:

... it was another piece of information to the puzzle, I guess. So I definitely gained a better understanding of what I had and why I had it If I had a bunch of unanswered questions about my disease then I would feel even more lost. So I think through the genetics session I learned a lot about the disease, and I think that's a good start to coping and adjusting to that." (#9, age 5) (Pichini et al., 2016, p. 587).

In counselling sessions young people were advised and given information regarding health and coping strategies:

... afterwards I kind of knew exactly what was going on and how `I can plan for my future and things like that ... definitely now knowing that it is genetic and I am sort of, not

control it, but do things to I guess prevent my children from having it, or in the case that they do have it, teach them how to deal with it.” (#10, age 14) (Pichini et al., 2016, p. 587)

This data indicates that because of counselling and 1-1 support those affected by diagnosed conditions were able to develop some autonomy over their life and life-style choices which ultimately impacted on their sense of self and wellbeing.

This behaviour change was noted by Mand et al (2013) whose study of 16-17 year olds with diagnosed Huntingtons Disease displayed a more positive psychosocial outlook when receiving counselling for either positive or negative genetic test results, the participants remembered acknowledging it positively:

On receiving their results some participants’ long-term perspectives altered, and enabled them to make lifestyle choices:

I look at life a bit differently. I want to get uni over and done with; I want everything to be done quickly, just in case something happens. I want to have kids young; I want to get married young, just in case. Madeline: HNPCC: 16+ve: 18

Genetic testing, counselling and wider family support services appears to be of benefit to children and adolescents with diagnosed single-gene disorders, but what impact would counselling, and intervention have on children’s perceptions of complex traits, especially when transmission and diagnosis are not so clear and intervention vague or less certain of success?

2.11. What do we know of children's perceptions of complex traits?

Understanding the abstract nature of complex traits can be difficult for families and children to understand, as opposed to the sorts of single-gene disorders discussed earlier. This is especially true when thinking about Type 2 Diabetes (T2D), which has a prevalence of 60 million people within Europe (Who/Europe, n.d., para 1). Ali (2013) suggests that the complexity of "T2D is the result of interaction between environmental factors and a strong hereditary component" (p. 114). T2D can occur on the basis of interplay between genetic risk factors and environmental factors such as having an inactive lifestyle, being obese, high or low birthweight, diet, smoking and drinking. These combination of factors Ali (2013) suggests are important in the development of T2D "but they do not impact everyone in the same way" (p. 114). Indeed, Ali (2013) indicates "that the lifetime risk of developing T2D is 40% for individuals who have one parent with T2D and 70% if both parents are affected" (p. 115). Ali (2013) describes how although families may share environments (home life/routines) it is the individual's "genetic influence" (p. 119) which may lead to individual differences not only in lifestyle choices but also in metabolism and food preferences. With polygenic influences (multiple genetic variants of small effect) interacting with the environment (e.g., diet and exercise) at an individual level, this highlights the complex nature of T2D. With this complexity of gene-environment interplay and low levels of genetic literacy (Chapman, 2018) it could be argued that there is a need for better public education of genetic transmission alongside further research into genetic risk factors and their interplay with known environmental risk factors.

Turner et al. (2015) illustrated a similar pattern to the research on inherited single-gene disorders, of not only a gap in children's genetic knowledge but also of misconceptions about the genetic transmission of Type 2 diabetes. They found that some young people

believe they are at genetic risk of Type 2 Diabetes (T2D) on the basis of family history alone, arguably family history is a good risk indicator and much better than GPS at this stage. The perspective that they were at greater risk than someone without the same family history were found to limit the uptake of support services offered to children with T2D. Turner et al (2014) interviewed 12 adolescents with TD2, concluding that some adolescents had not been shocked by their prognosis as “their parents had Type 2 diabetes” (Turner et al., 2015, p. 253) and from interviewing the 12 participants noted that some “felt it was inevitable they would become diabetic, and that diabetes was a condition they were familiar with” (Turner et al., 2015, p. 253).

Interviewer

So when you were first diagnosed, was it a big thing really?

Participant

Well like my dad’s got it and most of mum’s side and everyone’s got it, so just grew up with it and everything.

Interviewer

So it didn’t worry you or faze you too much or upset you at the time?

Participant

No, not really. (Participant 5)(Turner et al., 2015, p. 253).

This fatalistic view of a complex trait has also been noted to impact and influence the effectiveness and uptake of treatment for T2D. Bullying from peers about the use of needles to inject insulin and weight gain from the drugs themselves also impacted and influenced treatment effectiveness and uptake. This in turn affected the take up of lifestyle changes as adolescents did not want to appear dissimilar to their friends, as Schwab (2018) points out. Turner et al. (2015) also noted that the pessimistic view held by young people with T2D

condition stems from young people not fully understanding genetic inheritance and that intervention could improve their diagnosis. In complex traits genetic variants do not work in deterministic ways. It is possible that knowledge about genetic inheritance risks could reduce deterministic views enough to ignite conversations with parents to enable lifestyle changes that may enhance life outcomes. As noted earlier, Chapman et al. (2018) found that those who were more informed were less likely to express deterministic views. Relatedly, what effects could pre-symptomatic testing for identifying an increased likelihood of a learning difficulty have on young children and adolescents? If children were offered the opportunity of finding out genetic risks, would they want to do anything about it? Would the nature of complex traits and intervention strategies confuse and put off children from trying their best to enhance their life choices/outcomes, if such an approach was ever clearly justified by the science? These are important questions to consider and to study empirically before such DNA screening becomes widely available as some commentators forecast that it will (e.g. Plomin, 2019).

2.12. Do perceptions of complex traits and perceptions of risk of transmission differ to perceptions single-gene disorders – could perceptions affect intervention?

Children and young people seem to apply the same genetic inheritance principles to both single-gene and complex traits, based on observed family history and beliefs about genetic determinism, and this is usually inaccurate, inappropriate and unhelpful (McGill et al., 2018; Godino et al., 2016; Mand et al., 2013; Forrest et al., 2015; McConkie-Rosell et al., 2008; Pichini et al., 2016). For outcomes like Huntington's Disease DNA can be destiny but this is simply not the case for reading, writing, arithmetic, anxiety or paying attention in class. Indeed, perceptions of complex traits such as T2D have led some children and young people to conclude that developing the disease is out of their control (Turner et al., 2015). For example, diet and exercise may be controlled by the parents due to economic difficulties

and a lack of parental modelling of the need for exercise, or access to sporting activities which lead children to become apathetic regarding diagnosis and changing behaviours to alleviate symptoms. It is important for us to understand how children and young people view the aetiology of learning and behaviour and whether this leads to deterministic views.

The attitudes and behaviours expressed by children and young people diagnosed with single-gene disorders were different in that there was more expressed anxiety and worry about not knowing if children were carriers or had a disease that had not yet developed phenotypic outcomes (Mand et al., 2013). These perceptions were likely due to knowing that there was a 50/50 chance that you have or don't have something compared with complex traits where there is the probability that you are at an increased likelihood of being either better or worse at something than average. Surprisingly, those children with T2D complex traits showed apathy and resignation towards intervention strategies, which may have occurred because the intervention was seen as being out of their control (diet and exercise), and we see the same pattern in adults with T2D (Sanderson et al., 2013). Arguably it could indicate "stereotype-based self-fulfilling prophecies" (Madon et al., 2018, p. 825) amongst family members. However, children with single-gene disorders, through knowing about their status felt able to make lifestyle choices such as trying to be physically fitter and eating healthier and taking part in earlier screening processes to identify onset which reduced anxiety (Alderfer et al., 2017). It could be argued that single-gene disorders are much simpler to comprehend than complex traits and related polygenic scores. Could this be a problem within an educational context?

2.13. What are children's perceptions of the concept of genetic risk?

Understanding – and misunderstanding - of genetic risk factors may impact decisions made by individuals, especially in terms of long-term prognosis and the effectiveness of interventions. This was found by Meulenkamp et al. (2008) when examining the perceptions of children, aged 8 to 18 years of age, who were diagnosed as carriers for Long QT Syndrome (LQTS) (n = 11), Hypertrophic Cardiomyopathy (HCM) (n = 6) and Familial Hypercholesterolemia (FH) (n = 16). Through semi-structured interviews, the participants could articulate their understanding of the causes of their diseases by explaining that “it’s in the genes,” “hereditary” or “it’s in the family” (Meulenkamp et al., 2008, p. 3139). In terms of managing their risk of disease development, the children expressed consequences that might affect them in the future – for example not being able to be a pilot, being unable to have a family for fear of passing on their problems or changing behaviours so that it would not negatively affect their heart conditions. When asked how interventions supported their risk of disease development one child was positive by explaining that taking tablets helped her heart function, whilst another had a more negative view of taking medicine because their father and brother had developed severe difficulties even though they were taking medication. In taking control of the risks, two children who had HCM explained their self-limitation of demanding sports activities in a bid to stop themselves developing hypertrophy. When interviewing FH children, Meulenkamp et al (2008) demonstrated that children showed a greater awareness of their risks of developing high cholesterol levels by choosing to regulate their diets:

sometimes I eat fatty things and then it rises a bit and then I eat lots of fruit again and then it drops a bit. But then I eat healthy things, that lowers the cholesterol, then it drops even further (FH, girl, 8 years old) (Meulenkamp et al., 2008, p. 3140)

In recognising that children have worries about the critical nature of their conditions Meulenkamp et al (2008) study also indicated that children were acutely aware of the risks associated with their condition by noting family members who have the same cardiovascular disease, explaining that:

Well that things go wrong and stuff ... or worse, like with my aunt (has had cardiac arrest)" (LQTS type 2, girl, 15 years old).

Uhm ... yes also because I have the highest score out of the three of us, that it looks similar to what my grandad has had (deceased) (FH, boy, 14 years old)" (p. 3140).

Although a small-scale study, Meulenkamp et al. (2008) demonstrated how children recognise the risks they face having been diagnosed as a carrier for the three types of heart conditions. The study also indicated that children were open to intervention, with the majority indicating a belief that medication was more effective than behavioural intervention because their disease was biologically based. The children's belief was the intervention should be medicinal to be effective, as behavioural changes such as a reduction in demanding physical activity and maintaining strict dietary control was not effective enough to stop the diseases from progressing. It would be interesting to see if a similar belief would cause harm from an educational risk perspective where diagnosis of complex traits and intervention is not so clear. An important point to also consider is that most of these risks are things that medicine has figured out a treatment for. Where this isn't the case, would it be worth it, based on Meulenkamp et al. (2008) findings? There is a need to consider whether a risk is actionable. Currently within education we have good interventions for some things for

example reading (Early Words together and Skills Academy), but arguably for Autism Spectrum Disorder (Early Bird, Early Bird Plus, Early Bird Health Minds and Teen Life), which focusses on parent interventions, as opposed to children's interventions. This seems to be the case for many learning and behaviour differences (Sokolowskin & Ansari, 2018), limiting the actionability of genetic risk prediction.

Another study by Bradbury et al. (2012) investigated adolescent girls' understanding of genetic risk factors for breast cancer. Through semi-structured interviews the study gained insight into adolescent girls at high-risk of familial breast cancer (35) and also population-risk (19) girls' perceptions. Data indicated that the sample of high-risk adolescents (76%) cited family history of breast cancer as increasing their risk of developing breast cancer, in comparison to 22% of the population-risk group. The study also indicated that the high-risk group perceived that breast cancer could occur before reaching adulthood and there were strategies which could reduce this risk for example, frequent screening, self-examination, having a healthy diet, ensuring uptake of exercise and not smoking, drinking or taking drugs. Bradbury et al., (2012) concluded that high-risk females learn about their heightened risk of breast cancer through family communication which enabled them to alter their health-related behaviour to reduce risk.

Another study by Miller et al (2013) investigated consent to undertake whole genome (WGS) and whole exome sequencing (WES) exploring adolescents' (13-17 year olds) knowledge and views regarding risks associated with adult-onset disorders:

Moderator: What if you couldn't do anything to prevent the cancer, would you still want to know?

AD06: I could live a good life and be prepared with my family, they love me and would stick by me and help me make good decisions.

AD03: Probably not. I'd rather be surprised than know it's coming, because that's worse, to me ... because if you can't cure it, the anxiety of when it will come would make me sick. (Levenseller et al., 2013, p. 559)

Being informed of results was also an important point for adolescents when considering carrier status as knowing the risks would help them make informed choices about future family planning:

AD07: "I would want to know what my child would have to go through to become healthier."

AD03: "I said yes, I'd want to know, because then I wouldn't have kids. I don't want anything detrimental to happen to my kids." (Levenseller, 2013, p. 559)

Levenseller et al. (2013) study also demonstrated that adolescents felt that they should know all the results from tests giving reasons such as it being their body and having a right to know or being upset, even though "parents might not tell them the full information in order to protect them" (p. 561). Within an educational context, this parental 'gatekeeper protection' already used in the SEND support process may actually hinder the process of children developing autonomy to input into intervention. Where testing occurs in infancy ie. before the child has capacity to understand or contribute to the support process (their intervention plans), when the child is developmentally ready, they should be asked to contribute their opinions (Department for Education and Department of Health, 2015). However, if children do not know their risk status for educational underachievement the impact of intervention strategies may seem to the child to be ineffective – 'a done to, not in discussion with' approach will have no meaning for the child and could arguably also be associated with being 'at probable risk' of very high attainment too (David, 2017). From a positive perspective,

other possibilities may include for example avoidance of expectancy effects. If science were to be available where children could be tested for an increased likelihood of learning difficulties, children having age-appropriate risk related results discussed with them and their parents, could possibly challenge the status quo of the medical model and engage the children in helping to develop the tools and strategies that work for them. Or it could have negative effects. The problem is that we don't currently know.

2.14. Summary

These bodies of research can help us to understand how typically developing children perceive children with learning and behaviour differences. It highlights the need for interventions which supports the social inclusion and development of positive attitudes towards differences (Petry, 2018; Woodgate et al., 2019) the formation of friendships (Grutter et al., 2017; Broomhead, 2019) to shine a strong spotlight on peer feedback to increase acceptance of differences (Huber et al., 2018) and developing an awareness of differences through contact experiences with those who have differences (de Boer et al., 2012; Barr & Brachitta, 2015; Schwab, 2017; Gus, 2000) . The review also focused on children's perceptions of genetics and if anything could be learned from a clinical context with regard to complex traits like learning difficulties and educational achievement. Ultimately, it has explored whether acknowledging a genetic basis for diagnosis will make labels of difference more or less harmful or, as some have argued, whether it will make the labelling of differences unnecessary. In trying to answer this question, the following chapter, therefore, reviews literature about those children who already have some form of SEND diagnosis. It considers what impact the use of terminology has on children's self-esteem and their need to access support, and children's perceptions of being viewed as different. Would

screening for an increased likelihood of learning and behaviour differences, therefore, cause more harm than good?

2.15. What are the psychological impacts of labelling?

2.15.1. Risks and benefits of labelling: A Theoretical Perspective

Gillman et al. (2000) made the case that if children with additional needs are not labelled, they will be forgotten and unable to access support and provision. By contrast, some researchers have argued that labels are not necessary because they are often vague (e.g. ASD) and schools can cluster children with similar symptoms, regardless of label, into general intervention groups (Laughlin & Boyle, 2007). However, others argue that this approach does not meet individual needs and that increasingly “many of the most vulnerable children in society end up without the support to which they are entitled – even years- as parents battle to secure the right provision to meet their child’s needs” (Weale & McIntyre, 22 Oct 2018, para. 3) Labels, therefore, as Gillman et al. (2000) suggested, can be seen as serving a useful purpose in making it more likely that children’s additional needs will be met. Labels can be seen as having other benefits too.

Indeed, Riddick (2001) suggests that historically, due to the hidden nature of dyslexia, dyslexic children were often viewed as showing a deficiency in intellect, poor ambition and impoverished home lives. This was in part due to education professionals being “reluctant to accept the construct of dyslexia” (p. 230). Riddick et al. (1997) indicates that the labelling of dyslexia, can be valuable for difficulties which cannot be seen as it provides a reason for particular problems that are observed by others, but also stops erroneous and unfavourable disapproval and criticism. Riddick et al. (1997) study gathered the views of dyslexic children, which indicated that other negative labels applied to dyslexic children had a negative impact on self-esteem after children attributed these labels to themselves. One

participant in this study explained that they had never been called names because of a label, but because they couldn't read and thought they were stupid along with their peers. The children interviewed indicated that having a 'formal label' of dyslexia (Riddick et al., 2010, p. 231) counteracted pessimistic views which were produced by inaccurate informal labels and supported positive self-esteem and self-efficacy. Arguably, this might also prove the case with screening for potential learning and behaviour differences, including dyslexia, too.

Another study by Holmes et al. (2010) suggests that 80% of children with poor working memory often do not reach their full potential in reading and maths due to their specific learning difficulty being under-recognised as something that negatively affects long term outcomes such as educational attainment, jobs and emotional wellbeing. Children who have poor working memory are not currently registered as having a special educational need. Holmes et al. (2010) also suggests that the gap in reading and maths is growing wider between peers, as children with poor working memory are often labelled as lazy and not trying hard enough, a very similar concept to the dyslexia argument. Is there an argument for recognising potential risks early on, giving a name (label) for this difficulty so that it is recognised by parents, teachers and peer as a difficulty and intervening as early as possible to offer support? Both of these examples support Gillman's (2000) case that not having a label can cause harm in the form of denying children access to educational support. That said, there are other issues to consider such as whether a label is stigmatising, and if screening DNA for potential risks of learning or behaviour differences might exacerbate this.

Corrigan et al. (2009) explored social psychological models to investigate self-stigma associated with labelling, focusing on mental illness labels. They described two modes by which stigma can be expressed, that of public attitudes and that of self-stigma, associated with what they termed the "why try effect" (p.75). They suggested that self-stigma occurs as a result of a person being aware of, and agreeing with and applying, stereotypical

assumptions about people with their label and argued that this can lead to them not achieving their aspirations and goals. Corrigan et al. (2009) suggested that disclosure of mental health issues can be both positive and negative. Disclosure can lead to social disapproval, meaning that some people with mental health issues are likely to avoid certain situations for fear of others finding out. However, disclosure can also provide a feeling of wellbeing and relief. Arguably, if disclosure is made early in a child's development (Gelman, 2004), this may lead to better understanding and reduced stigma effects.

2.15.2. Terminology of labels

Algraigray and Boyle (2017) have argued that terminology such as 'Special Educational Needs', 'disabled' and 'disability' shape societies' views and that labels are "socially developed to carry other meanings leading to the devaluation of people being so labelled" (Algraigray & Boyles, 2017, p. 16). They have made a case for a change in terminology to reflect a "softer" (p. 15) approach to supporting children with additional needs which could, they suggest, ultimately lead to increased social acceptance and equality. The current study uses the terminology 'differences' instead of 'difficulties' or 'problems' to reduce the negative effects that language can have (Bottema-Beutel, 2021) and which recognises the 'diversity and respect of human dignity and identity' (Demetriou, 2020, p. 7) and is an essential part of this thesis in listening to and working with children.

Froni and Rothbart (2013) showed that, universally, people attach labels to and categorize objects and that this develops the perception and understanding of groups (p. 126). Their essay argued against the endurance of labels and the implications for mental health, as once categorized and labelled, the "effects of stigma on social perception persist long after the category label is no longer applicable" (p. 130). They concluded that categorizing effects are strongly associated with the mechanism of stereotyping. We need to ask whether this

also applies when categorizing children within a SEND educational paradigm and if screening for learning or behaviour differences of all children would exacerbate this?

Runswick-Cole and Hodge (2009) argue that the term Special Educational Needs has continued to shine a spotlight on a within-child deficit model of inclusion. The article suggests embracing new terminology such as “educational rights” (p.1) which may have a positive impact for children who are categorized or labelled as having SEN. Indeed, Holt (2004) also indicates that the use of the word “special” highlights the differences between children with identified needs as they may not fit within “socially constructed age-related learning expectations” (p. 7) and therefore require the term special needs. Gernsbacher et al (2016) investigated through several vignette studies the euphemism “special needs” indicating that the “euphemism *special needs* is no more effective than the non-euphemized term *disability*” (p. 1). The study, which gathered data from a sample of 530 participants, investigated the perceptions of others regarding how children, adolescents and adults were seen if they were described as having special needs, had a disability or no label attached to them. Conclusions drawn presented a negative view of the term special needs and participants thought it was ineffective in invoking a positive outlook on disability, as this aroused thoughts of cognitive impairment, a hidden disability, which can lead to stigmatization and stereotyping, (Singh, 2011). There would also have to be careful consideration of the effect of terminology if screening DNA for differences were to become the norm in education.

Ho (2004) argues that although a label of learning disability can lead to help in the form of lawful security both children and parents may not want to be diagnosed and singled out for fear of appearing odd, imperfect, or inadequate. Ho (2004) also suggests that discrimination is still apparent as teaching staff and school leaders working within legislation can hold the view that SEN children are less capable and intrinsically deficient, exemplifying

this view through having lower expectations of achievement because of observed behaviour. Arguably screening for increased likelihood of learning or behaviour differences of all children could intensify current teacher perspectives.

Norwich (2009) in Algraigray and Boyle (2017) suggests that having been given the label of special educational needs has negative repercussions, even into adulthood. Moreover, Glazzard's (2011) study in a primary school in northern England found that even though the social model of inclusion was used, the system for identifying need was established through a medical model which emphasizes rather than decreases perceptions of difference (Williams et al., 2019). Lauchlan and Boyle (2007) explain that "the label 'learning difficulties', may stay with an individual throughout their life" (p.38). This concept would also need to be considered when thinking about impact of screening DNA for learning and behaviour differences and the long-term effects of 'finding something'.

Algraigray and Boyle (2017) considered who currently has jurisdiction to attach labels to children with special educational needs. In reviewing the literature, they considered how practitioners who govern the "disability industry" (p. 8) form societal perceptions, through the use of medical terminology. These attributes can be viewed positively but more often negatively. They also questioned whether a label does actually enable provision to support need. The article also highlights the negative perpetuating effects on long term educational attainment and job prospects. Questions arising within an educational paradigm include: how do schools provide appropriate intervention for a diagnosed difficulty? Would screening DNA for potential risk of learning or behaviour differences lead to timely and adequate support and intervention or would this just add to the current 'increased need, stretched budgets, and reduced capacity' (Thompson et al., 2021, p. 34) in schools?

2.16. How support is accessed within English schools

Within English education, it is the duty of the Local Authority and schools to implement the SEND Code of Practice so that children who have been assessed as having additional needs are supported through discussion and allocation of funding and resources (The Key, 2017). These needs can fall into four main areas, namely, “communication and interaction difficulties, cognition and learning needs, social, emotional and mental health difficulties, sensory and/or physical needs” (The Key, 2017). Through the SEN support process of ‘assess, plan, do, review’, the SEND code of practice specifies that when assessing children “the pupil’s own views” (p. 100) should be taken into account when identifying learning needs.

Assessments can take the form of standardized reading and numeracy testing, profiling of communication needs, and screening assessments (Packer, 2017). When planning, the views of the child, parent and teacher are used to support intervention, which could include 1-1 support, working in small groups or additional provision (SEND Code of Practice, 2014). Implementing the support plan requires constant daily monitoring and evaluation. Finally, the review considers how much progress the child has made and the impact the strategies put in place have made to progress. This is an opportunity for the perceptions of the child, parent, and teachers regarding the efficacy of intervention and ways forward for the next review to be taken into account (Packer, 2017). The support process identifies that children must be asked for their views at every stage, but it does not specify the format for doing so.

Sargeant and Gillett-Swan (2015) explain that including children’s voices in practice should include a variety of methods to communicate views. It has also been argued, from an assessment viewpoint, that children’s voices need to be at the centre of the process and that the system should not rely on written responses to gauge children’s understanding (Robinson,

2014). In a related point, Deakin et al. (2018) argue that there is a requirement to deal with the continued negative attributes towards particular groups like children with Down Syndrome, and to tackle this as early as possible within educational settings. This could possibly be achieved by hearing the views of children with Down Syndrome in creative ways, as described by Deakin et al. (2018), and by using interventions as described by Armstrong et al (2017) to tackle negative views. Similar approaches could be taken to children with other disabilities or labels too.

2.17. What can be learnt from those who already have a label?

Discrimination occurs when individuals are subjected to harmful treatment because they are members of a particular group (Fishbein, 1996). In a study examining reflections on their relationship experiences from 16 adolescents and adults aged 18-30 years of age with Attention Deficit Hyperactivity Disorder (ADHD) McKeague et al. (2015) noted three key elements: a feeling of being dissimilar to peers; being vilified by others and by themselves (self-stigma); and disclosure in the hope of gaining tolerance. One participant commented that “as a teenager, you don’t want to be judged or classified or be thought of as in some way defective” (McKeague et al., 2015, p. 161). However, the study was limited by most reflections being retrospective, and potentially biased by later experiences and social emotional development and intervention. If the SEND process was pursued as intended with the “child at the heart of the assessment and planning process” (SEND Code of Practice, 2015, p. 147) then it is possible that challenges such as those described by McKeague et al. (2015) sample may have been avoided. This particular study raises the importance of adhering to the SEND Code of Practice 2015 process but also to the ‘education of’ and ‘listening to’ and ‘acting upon’ children’s views as early as possible in order to try to negate the possible effects of “perceived discrimination” (Schmitt et al., 2014).

Other studies have focused on particular disabilities or 'labels'. For example, Deakin et al. (2018) investigated the view that children with Down Syndrome do not have an understanding of their disability or of society's attitudes towards them. They found, using categorization tasks, photograph sorting and attribution tasks, that children were able to express their preferences, indicating their awareness of their disability and connected social beliefs. A 'preference for social partners' task required participants to choose who they would play with in the playground when shown a photo of a child with Down Syndrome and a typically developing child. The outcome from this task indicated that children with Down Syndrome were generally more negative about the pictures of children with Down Syndrome than pictures of typically developing children. However, Children with Down Syndrome associated themselves with the typically developing photographs and this was just one of a range of similar tasks and the researchers consistently found that participants were aware of their Down Syndrome characteristics and had positive self-esteem. This positive self-esteem is thought to be due to significant others playing a crucial part in the development of self and social distinctiveness, and positive social interactions in the home (Cvencek et al., 2017, p. 7). Down Syndrome gives us a useful example of a diagnosis in which the label in and of itself does not appear harmful to affected individuals.

Understanding of the consequences of being diagnosed with dyslexia in adolescence is developing. Armstrong and Humphrey (2009) outlined the negative effects that 'unlabelled' dyslexia can have on individuals' self-esteem and confidence and argued that labelling can provide a genuine and helpful explanation for difficulties, counteracting negative views of being 'stupid' and 'lazy' (Riddick, 2000, p. 661). This, Armstrong and Humphrey (2009) argue, is due to a 'reframing process' (p.100) of dyslexia where positive modifications are made by dyslexics, who admit, accept, comprehend and curb its effects with positive changes. Their data indicates that earlier diagnosis and labelling of dyslexia, with

psychological support, is vital for children to make accommodation within the development of the self. Later diagnosis and integration of the label appears to be highly difficult during adolescence, a sensitive' period in the development of social relationships (Mareschal et al., 2013).

Reporting a small-scale study of 20 children, Humphrey and Lewis (2008) share the views of children labelled as having Asperger's syndrome (AS) on the basis of data collected via interviews, diaries and drawings. The findings demonstrated that these children diagnosed with AS held diverse and sometimes conflicting views of themselves. Those with a negative view of their difficulties perceived themselves as abnormal. Humphrey and Lewis (2008) suggested that the children seemed to have formulated this notion, independently, and through evaluations from others' comments. This view supports the finding of Cvencek et al. (2017) who suggest that pupils may receive contrasting social messages regarding themselves as learners and "such messages may shape their academic self-concepts and performance" (p. 1105). It is interesting to note that those who viewed their AS positively, also talked about positive friendships when accepting their difficulties.

Shtayermman (2009) examined how a group of adolescents felt about their diagnosis of AS and investigated whether there were signs that stigma was attached to diagnosis. The study concluded that levels of stigma could be related to the label of AS rather than to outward symptoms. This raises questions for the current study as children who are identified as having an educational need are usually diagnosed with conditions and labelled into categories in order to access resources and support, through the SEN support process. So, could labelling for the purposes of support and provision have a negative effect of self-esteem and social development?

Taylor et al (2010) investigated whether there was a correlation between general SEND labelling and specific SEND labelling in terms of self-esteem. The study suggested that having a general label of SEND affected self-esteem far more negatively than a specific label, as the interpretation of general SEND did not indicate a child's specific difficulties adequately enough to gain provision and understanding from a social perspective. Indeed, Taylor et al. (2010) suggest for children to reach their potential, the identification of problems should begin as soon as possible to reduce the negative effects of generalised labelling of being delayed.

Sheffield and Morgan (2017) explored the understanding of pupils labelled as having problems with their Social, Emotional and Mental Health (SEMH), previously termed Behavioural, Emotional and Social Difficulties (BESD). Conclusions drawn from this study suggested that children were unaware of their new label (SEMH) and statement of educational needs. This suggests that children's voices may not have been heard in the labelling or support and planning process. They also expressed a view that the terminology was negative and did not want that label to be fixed to them. Sheffield and Morgan (2017) suggest that asking children to define their needs, working together with adults, is a better approach than attaching a label to the children, which can be misunderstood and regarded adversely. In doing so, it is suggested that children's participation in a needs led discussion meets with the person-centred approach outlined in the SEN Code of Practice (DfE, 2015). That said, a recent exploratory study, Fields (2018) highlights that opportunities offered to children within the SEN Support process are often tokenistic despite the process indicating gaining the views of children at every stage.

Lyons and Roulstone (2017) after evaluating interview data from 59 nine-twelve year olds with speech difficulties indicated that the children in the study disapproved of the labels

they had been given, which they felt depicted them in pessimistic ways, contradicting how they viewed themselves. These findings also suggest working in partnership with the children themselves to develop positive changes to terminology used within the speech and language process. The study highlights how parents and teachers should be conscious of how labelling can adversely affect children's acceptance within social groups. The study highlights a need to educate and raise public awareness to reduce stereotyping and stigma of children labelled with speech difficulties.

Using semi-structured interviews with pupils in Sweden, Ljusberg (2011) explored the perspectives of ten children who attended remedial classes because of poor concentration or an ADHD diagnosis. The children were mindful that they were thought of as challenging in terms of behaviour and described themselves as abnormal or different. Their perceptions of being 'abnormal/different' affected them in terms of perceived loss of friendships and limitations of beginning new ones in remedial classroom environments. This then led to loneliness and loss of self-esteem. The children themselves viewed this grouping together as being stigmatizing. The school's approach focused on individual deficits and created social difficulties for the children who, in turn, viewed themselves negatively, affecting their self-esteem.

Singh (2012) demonstrated in a VOICES (Voices On Identity, Childhood, Ethics and Stimulants) study that gaining the views of children with ADHD provides "a more realistic, more informed, more balanced, and more useful view" (p. 2) of their difficulties and how to support them. In a study of 151 families from America and the UK, the VOICES team interviewed children between 9 and 14 years of age and found that "aggressive school culture" (p. 18) makes life hard for pupils with ADHD to control their behaviour. Interviews also indicated, particularly in America, that children had an awareness of the term ADHD but

were unsure as to what it was. The study also indicated that children broadly felt that treatments such as Ritalin did not alter their “sense of self” (Singh, 2012, p. 24), expressing a positive view of their change in behaviour as a result of their medication. The study outlines ways in which children can be supported to empower them in ethical and behavioural development, taking individual accountability for their behaviour. The study also shows that children are capable of making decisions about their ADHD. In being part of the decision-making process, the participants within this study highlighted positive aspects, such as gaining accountability and knowledge of the efficacy of interventions such as Ritalin. Having autonomy to make choices was also viewed as helpful. It would be interesting to ask whether similar risks and benefits to labelling and disclosure apply to other children within the SEND support process, and whether they are given the opportunity to express their thoughts about the labels assigned to them, and decisions taken on the basis of those labels? This is more important than ever as society considers the possibility of using DNA-data to predict the probability of an infant needing a diagnostic label.

Both Riddick (2000) and Gus (2000) indicate that there may be little awareness of labels among children, but more often a child’s behaviours – potentially the reasons they were labelled in the first place - are the instigator of “stereotypes, prejudice, and discrimination” (Corrigan et al., 2009, p. 75). Would, therefore, screening for the potential increased likelihood of learning and behaviour differences have any impact on the status quo? The current study asks whether a Philosophy 4 Children (P4C) intervention could lead to this change?

2.18. What is Philosophy 4 Children?

2.18.1. What is P4C?

Philosopher Matthew Lipman established ‘philosophy for or with children’ (P4C) in 1970. He was motivated by psychologists such as Vygotsky and the philosopher Socrates in the development of a new mode of “philosophical dialogue within a community of inquiry, which constitutes the essence of P4C”. (Daniel et al., 2011). In P4C the community of inquiry is made up of children, with an adult supporting and guiding discussion as needed.

An example of P4C Community of Inquiry questions can be seen in the discussion plans prepared for P4C sessions. For instance, in a session focused on “making things from the outside and from the inside the following questions could be asked: 1. How do you eat a peach, from the inside out, or from the outside in? 2. If you wanted someone to explain to you how your body works, would you want to know what goes on inside of you? 5. If you sympathize with your friend, does that mean you understand your friend? From the inside? As well as from the outside??” (Lipman, 2011, p. 12).

This concept was then developed further by the Institute for the Advancement of Philosophy for Children (IAPC) in 1970 to state that the Philosophy for Children (P4C) goal is to enable children to listen to the views of other children and to support children to give their views in a logical, reflective manner. Anderson (2016) explains how important P4C can be for confronting beliefs and values, with regard to understanding and ideas, particularly with regard to others in the P4C group but from a personal perspective too. In 1992 the Society for the Advancement of Philosophical Enquiry and Reflection in Education (SAPERRE) began to promote and advocate the use of P4C in schools in England. The main

value and idea behind the use of the P4C approach is to promote a desire to know, develop analytical thinking skills and cultivate reasoning and discussion with a view to increasing children's knowledge and understanding. This is highly relevant in the context of a problem designed to explore children's perceptions of learning and behaviour differences. The four kinds of thinking classified by SAPERE as effective when using P4C are, Caring thinking or listening, Collaborative thinking or responding and supporting with reason, Critical thinking or responding and challenging with reason and Creative thinking or connecting and suggesting with reason (Anderson, 2016).

Some argue that children are not able to think critically or argue in complex ways which supports the notion that they are not capable of undertaking philosophical inquiry (Daniel & Auriac, 2001). In defence of P4C methodology Daniel and Auriac (2001) argue that "doing" (p. 425) P4C in a classroom setting can foster children's critical thinking skills through shared discussion. Daniel and Auriac (2001) defined philosophy "as a field of study or a mode of thinking. As a field of study, philosophy aims at the discovery of truth; inspired by Plato and Scholastics, it is focussed on knowledge and logical reasoning" (p. 420). They outlined where critical thinking fits within P4C, arguing that it is philosophical in nature, requiring open dialogue (peer discussion) and reflection on questions, therefore providing a rationale for the use of P4C within classroom practice.

By contrast, Biesta (2011), has queried the idea of using philosophy in education as an "instrumental pedagogy" (p. 317) and, instead, advocated an alternative view of P4C as "exposure and interruption" (p. 317). For Biesta (2011) P4C should not seek to develop particular skills but should, rather, represent a pedagogical approach which creates uncertainty and reduces the urge to hurry into the traditional approach of questioning, giving

reasons, exemplifying and making connections. This, Biesta noted, is an indication of the characteristics of philosophy which is divergent from the scientific model of “knowing and the improvement of knowledge” (p. 318) but places participants “in the position of the child as the one whose seeing, thinking and doing is not yet ‘filled’ with the knowledge, categories and ways of speaking of others” (p. 318). Working with children within the EYFS and philosophical enquiry-based intervention would fit with forming “an entirely different set of possibilities for the educational engagement with philosophy” (p. 318), a suitable view when considering the epistemological approach when working with younger children.

Developmentally children between the ages of 2-7 years of age have traditionally been viewed as egocentric. Piaget demonstrated that children within the preoperational thought stage “understand the world from their own perspective and find it difficult to understand the view of another person” (as quoted in Gillibrand et al., 2016, p. 37). However more recently this view has altered, Grigoroglou and Papafragou (2016) found that children have the ability to use visual facts to make particular adaptations to their perceptions when engaged within activities which require them to work collaboratively towards a shared outcome. In three experiments comparing 24 children aged between 4 and 5 years of age and 24 adults specific and generic adjustment of event descriptions, the study identified “the communicative circumstances under which children can make successful adaptations” (p. 2) indicating that young children are not egocentric when communicating, but that they do need additional prompts to support their ideas about the type and quantity of facts needed for the reason of the communication. This supports the Philosophy for Children approach, as stimuli are required in order to generate questions for discussion and reflection, and crucially provides the tools to support the communicative process required within P4C. Philosophy for Children interventions rely on the concept that through group discussion “critical reasoning

skills... creative thinking skills ... concentration skills ... communication skills ... social skills” (Gaut & Gaut, 2013, p. 3) can be developed and is suitable to support collaborative inquiry even for the youngest in the school. The target outcome of P4C “is to improve children’s reasoning abilities and judgement by having them thinking about thinking as they discuss concepts of importance to them” (Lipman, 1981, p. 37). Lipman also contended that critical thinking needs the framework of language in order to gain the skills (Trickey & Topping, 2004; IAPC; SAPERE).

Some dissenters have disagreed with the P4C approach and its core ideals and practices. For example, arguments have been presented that children do not have the capacity for thinking critically, that they are not able to argue and debate ideas, and that they need concrete rather than abstract stimuli in order to deliberate and contemplate (Daniel & Auriac, 2011). A practical example of this view comes from Youssef et al. (2016) who present findings from an Australian study which showed no positive effects on a variety of outcomes from taking part in P4C sessions. The study involved 280 Year 6 (10-11 year old) children and explored the effects of P4C on reading comprehension, maths, prosocial behaviour and self-esteem development. Results from the year-long study indicated an increase in reading comprehension skill but a decrease in self-esteem and interest in maths, suggesting that the Community of Inquiry (CoI) or P4C was actually harmful to self-esteem. It is suggested that these findings occurred because of the nature of the Community of Inquiry (CoI) in P4C which has no right or wrong answers. For higher ability children this may have a negative effect on self-esteem as this methodology could lead them to question themselves. It could be, therefore, that differences seen in approaches to teaching (ie. Traditional versus Collaborative Inquiry) will not yield the same attainment outcomes (facts-based curriculum versus the development of critical thinking skills). That said, the Youssef

et al. (2016) study's findings differ from other studies which have found slight positive effects for both cognitive and non-cognitive skills (e.g. Siddiqui et al., 2017a, Siddiqui et al., 2017b, Gorard et al., 2015, Colom et al., 2015, Trickey & Topping, 2007, Fair et al., 2015).

2.18.2. Is P4C effective?

In trying to evaluate the effect of P4C on cognitive outcomes, García-Moriyón et al., (2005) conducted a meta-analysis of extant research. They identified eighteen studies which conformed to a strict criteria set for inclusion within the analysis. They found that “P4C has a positive effect over the target thinking or reasoning skills. The average computed effect size was 0.58” (García-Moriyón et al., 2005, p. 17) a medium size effect. This indicated that the difference between intervention and control groups in the meta-analysis was “more than half a standard deviation” (p. 17). Findings also recommended following study guidelines such as the use of control groups and reporting of statistical data, to ensure that future studies would be valid and reliable.

Trickey and Topping (2004) conducted a systematic review of experimental studies which used P4C methodology, finding in ten studies, that all reported some positive outcomes after using a P4C intervention: The “mean effect size was 0.43 with low variance, indicating a consistent moderate positive effect for P4C on a wide range of outcome measures” (p. 365). This review also highlighted a probable obstruction to the wider use of P4C pedagogy being firmly fixed within the curriculum, as P4C goes against the “traditional culture of teaching” (p. 375). Trickey and Topping (2004) suggest that using P4C methodology could impact on teachers' perceptions regarding behavioural expectations within the classroom which would conflict with the pedagogy of “listening to and building upon what children were saying” (p. 375). Although this unconventional teaching method

encourages critical thinking, discussion and reflection, it appears to indicate a positive impact on children's behaviour and self-regulation of skills.

Further research has taken place since these early meta-analyses. Indeed, in 2014 Colom et al., (2014) presented interim results from a longitudinal study of P4C effects on both cognitive and non-cognitive development. At this interim stage the study had included 400 children in a P4C intervention group and 300 children in a control group. The children's ages ranged from 6 to 18. The interim results, after 10 years of this landmark 20 year study, showed that P4C had boosted general cognitive ability by half a standard deviation (7 IQ points) over that time. The researchers also found that P4C had a greater impact on those participants who are at the lower end of the cognitive distribution and that, as a result of having a community of inquiry in (P4C) classrooms, pro-social behaviour is regularly promoted in terms of "empathy, agreeableness, cooperation, attentiveness" (p. 55). The study acknowledges the difficulties in gaining data from short term interventions for cognitive and non-cognitive development and is designed to establish whether the observed gains will be maintained over time.

In their Education Endowment Foundation (EEF) report Gorard et al., (2015) found that a P4C intervention enhanced reading and maths achievement in UK schoolchildren in Key Stage 2 by the equivalent of 2 months' additional progress. They highlighted larger positive effects amongst KS2 children entitled to Free School Meals (FSM), an indicator of social and economic disadvantage in the UK. Both children and teachers described positive effects on listening skills, self-esteem and development in speaking skills. Gorard et al., (2017) acknowledged the strain within the educational curriculum between "imparting knowledge" (p. 5) and the improvement of the ability to apply understanding. Gorard et al., (2017) went on to assess whether the P4C intervention enhanced pupils' abilities in

questioning, reasoning, building debate and working together. The sample included 48 schools, 22 delivering a P4C intervention and 26 controls. Baseline measures included Cognitive Abilities Tests (CATs) results for all the children in year groups 4 and 5 and English and Maths KS2 results for those children beginning year 5. Outcomes indicated “small positive ‘effect’ sizes in favour of the P4C group in progress in reading (+0.12) and maths (+0.10)” (Gorard et al., 2017, p. 5). However, increases in CATs and writing scores did not reach statistical significance, but the trends were positive. Interestingly, FSM children indicated the most increase “(+0.29 in reading, +0.17 writing and +0.20 maths)” (Gorard et al., 2017, p. 5). The study concluded that if the school curriculum regards the development of reasoning skills as important to development, then adopting P4C methodology could be an encouraging way forward. Pupil feedback from the study demonstrated that children liked being responsible for the sessions and “solving their grievances with their peers” (p. 16) which impacted on the lessening of aggressive behaviours in the playground as children had “improved the way they talk” (p. 16).

In summary, it has been found that a P4C intervention can have a small to medium effect on cognitive outcomes but that this may be moderated by factors such as intervention length, age, and disadvantage.

2.18.3. Impact of P4C on non-cognitive skills

Siddiqui et al. (2017a) and Siddiqui et al. (2017b), when evaluating P4C intervention programmes, suggested that there has been some movement within the English school system towards placing greater emphasis on non-cognitive outcomes such as trust, critical thinking and civic mindedness, through interventions including Critical Thinking Skills lessons and Philosophy for Children (P4C). Siddiqui et al., (2017) suggested that there is currently scant data regarding non-cognitive development after school-based interventions, but the existing research suggests a slight positive impact of P4C intervention. Siddiqui et al. (2017) large

scale study of 2,722 pupils from 42 primary schools measured children's non-cognitive outcomes before and after completing P4C sessions. Social and communication skills, teamwork and resilience and empathy were measured using self-report questionnaires both pre- and post-intervention. Notable findings indicated that the intervention schools showed small gains in self-reported communication skills, teamwork, and resilience with rather small effect sizes of +0.10 and +0.15 respectively and a slightly larger effect for children who were free school meal eligible (FSM)) (Siddiqui et al., 2017). The study recognises the difficulty in evidencing non-cognitive outcomes, which is reliant on completing self-report questionnaires and transient feelings on the day but suggests that P4C interventions could be used to develop "pupils' character and values" (p. 17) and to reduce the differences between disadvantaged groups. This is particularly interesting in light of the focus of the current study on perceptions of children with SENDs. The findings also indicate that "a structured classroom inquiry and dialogue" (p. 17) can support children's development in listening skills and support "positive attitudes such as empathy, cooperation and resilience" (p. 17), albeit with small effects.

In a Malaysian study examining the effects of P4C on twenty-two 12 and 13 year-old children viewed as low achievers with low engagement, Yusoff (2018) demonstrated that P4C can prompt and encourage higher order thinking skills by "clarifying meanings, giving examples, making conclusion and inductive reasoning, distinguishing and classifying ideas" (p. 135). Yusoff (2018) defined low achievement as the difference between what pupils were attaining and what they could potentially achieve, and traditionally, in Malaysia, low achieving children are kept as a group and "labelled as those who would not succeed in academic and in future life" (p. 136). The study analysed observations of 8 P4C sessions, which indicated that when given the opportunity the children in the study were able to engage in higher order thinking skills and discussion. However, there are clear limitations with a

small observational study of this nature and so findings should be interpreted with caution. Yusoff (2018) argued that those children labelled as low achievers because of test results, if “given opportunity to voice out their opinions are valued in dialogic pedagogy, they can engage in classroom activities and demonstrate the ability to use reasoning skills” (p. 141). The authors pointed out the need for longitudinal research in this area.

Interestingly, Jenkins and Lyle (2010) found a positive effect of using P4C on the reasoning skills development of four, 10 year old primary aged children with standardized reading scores indicating “below-average reading ages” (p. 459). It was anticipated that that the children would be unable to develop clear and ethical questions due to their poorer reading ability identified through standardized reading tests. Contrary to the teacher’s belief the children within this study were found to be able to use “higher-order language skills” (p. 470) engaging in discussion which had meaning for them. The findings from this small-scale study compelled the teacher to reconsider the children’s ability, questioning the reliability of standardized reading assessments, as a decisive measure of the children’s capability. Indeed, the labelling or grouping of children in terms of standardized reading scores could lead to self-fulfilling prophecy of children’s attitudes and abilities as “once formed expectations about ourselves tend to be self-sustaining” (Sharma & Sharma, 2015, p. 49). It also suggests that some teachers may generalise inappropriately from one label (e.g. reading difficulties) to judgements of wider cognitive abilities. Allowing children to undertake P4C may help to counter negative effects of formal or informal labelling, by giving children a different way of showing the level of thinking they are capable of. This study supports the value of using P4C with younger children, who would be still developing reading skills, to enable them to think critically and reflectively on matters which concern them. However, as a particularly small study findings should be interpreted with caution.

Investigating emotional comprehension and early childhood social skills Dasi et al. (2013) used P4C based strategies to explore how children internalize important information through discussion and thinking, using a “Thinking Emotions” intervention. Prior to the study, teachers within the school undertook P4C training. The study was undertaken with children aged 4 and 5 years of age. The intervention group had 32 children and the control group 28. The intervention group received 30 sessions of 1 hour per week, with 16 sessions within a P4C paradigm of using a stimulus to spark questioning and debate, the other sessions were based on emotion topics (understanding emotion and how to deal with it). Participants were also asked to complete a sociogram by individually choosing two photographs of classmates they wanted to play and two they did not. Findings from the study indicated that the five year olds made significant improvement in emotional knowledge, social interactions and 4 year olds expanded greatly on their social development strategies. The study concluded that it would be pertinent to measure the stability of the positive outcomes over time.

Cassidy et al. (2018) investigated how effectively teaching children with social and emotional and behavioural needs within a P4C or “Community of Philosophical Inquiry (CoPI)” (p. 2) approach engages children in shared discussion. This study was novel in terms of investigating the use of P4C with children with Additional Support Needs (ASN) and communication needs. The study involved 2 participant schools, who had staff qualified to deliver the CoPI (McCall, 2009). Participants were between nine and twelve years of age and took part in 10 1 hour weekly sessions as part of the weekly timetable. The study used both qualitative and quantitative measures to understand the views of teachers regarding the children’s behaviour within the sessions. Observation of CoPI (P4C) sessions were also undertaken by the teachers, noting how children contributed to discussion, if children took turns to speak and how they self-regulated their behaviour. Teachers were asked to score

their perceptions on a three-point Likert scale. Teachers also recorded any behavioural incidents during the 10 week term of CoPI (P4C) and were subsequently interviewed after the completed sessions to elicit further observation and examine in greater depth their perceptions. Findings from this study demonstrated that the children in the study were able to take part in philosophical discussion with their classmates, and self-regulate their behaviour, as a result of the structured nature of the sessions. Cassidy et al. (2018) recommended that children with social, emotional, and behavioural needs and autism should have the chance to take part in CoPI (P4C) sessions which can encourage involvement, concentration and self-regulation skills. This study findings are from the perceptions of adults (teachers) it would be interesting to understand the child's perception of their feelings regarding engagement and behaviour self-regulation.

Cassidy and Christie (2013) investigated children's collaborative discussion within Community of Philosophical Inquiry (CoPI). Their study took place within six primary schools, comprising of eight mixed ability classrooms. Ages ranged from 5 to 11 years, with a total of 115 participants. Each took part in weekly, 1 hour sessions of CoPI, completing between four and nine sessions. Analysis of 24 discussions from the sessions indicated that not all discourse has the same educational significance. Data derived from the dialogues exemplified features of talk arising within the sessions namely:

- (a) providing examples, using analogy, simile, metaphor;
- (b) defining and/or differentiating words, phrases or terms;
- (c) clarification of a contribution (participant's own or another participant's);
- (d) perspective taking, including disagreement with self;
- (e) hypothesising or speculating;
- (f) introducing a new idea;
- (g) expressions of doubt. (p. 1076)

This demonstrates the abundance of discussion allowed within CoPI framework. The study suggests there are no correct or incorrect responses within CoPI but the chance to examine thoughts and beliefs and subject matter which might not emanate from general classroom discussion.

In summary, research findings indicate that non-cognitive skills can be developed through using P4C intervention. It appears that the ‘active ingredient’ within all of the P4C literature, highlighted above, could be the dialogue and discussion between peers which supports the enactment of change, something which could be harnessed within the current study. Notable findings indicated that non-cognitive development showed small gains in self-reported communication skills, teamwork, and resilience. Findings from international and English studies also noted that children with lower reading ability were able to use higher order thinking skills in P4C sessions irrespective of their standardized level of reading ability. Findings from studies also demonstrated that the children who had additional needs were able to take part in philosophical discussion with their classmates, and self-regulate their behaviour, as a result of the structured nature of the sessions.

2.18.4. Can P4C enhance understanding and tolerance of difference in young children

Armstrong et al. (2017) reviewed the effectiveness of a range of interventions aimed at reducing prejudice from peers against children who have disabilities. A meta-analysis identified four types of contact, “direct, extended, imagined or parasocial” (p. 4). The twelve studies fitting the study’s inclusion criteria determined the frequency of types of contact that supported a positive attitude towards disability. The most frequently noted direct contact (five studies) engaged discussion of disability with disabled people, working together on projects and participating in sporting activities was deemed to be effective interventions for reducing prejudice. Extended contact involving reading about disability, which also

indicated being effective. The third effective intervention type was guided imagined, where children imagined a positive interaction with a disabled peer. Interventions using parasocial contact, watching videos with disabled people discussing their lives, indicated not being an effective intervention. The findings suggest implementing intervention on a broader scale. This particular study argued that disabled children and neurotypical children should work together and that this would improve children's attitude towards differences. It would be interesting to elicit the effectiveness of using contact and storybooks in an early years setting to gauge attitudes towards disability.

Viguer et al. (2017) judged the efficacy of a two-year intervention which supported the emotional intelligence of children within schools. Participants, $n = 228$, were recruited from a primary school, aged between 10 and 11 years of age. The intervention was delivered by three psychologists and professional training was provided for teaching staff. The intervention comprised of a variety of methods such as theatre, storytelling, music therapy and group discussion. Pre- and post-intervention measures were the Emotional Quotient Inventory (EQ-i: YV) questionnaire and 4 time points of evaluation. Findings suggest that the EI intervention group showed increased gains in "intra-personal, inter-personal, stress management, adaptability and general mood" (p. 193) signifying that emotional intelligence can be developed. Although rigorous, the limitations of the study included the use of self-reporting of emotions and the possible implications of a labour-intensive teaching method and application, as well as doubts about the validity of the EQ construct. However, it would be interesting to see if P4C could provide similar results without the cost to schools.

The UK Government's Department for Education (DfE) recognise the pedagogical approaches and assessment tools needed to support the development of higher order thinking skills. National Curriculum guidance for the Early Years Foundation Stage (EYFS) sets out guidance relating to the Characteristics of effective learning and development highlighting

the importance of Creating and Thinking Critically and how adults can support children to achieve this by enabling “sustained shared thinking helps children to explore ideas and make links.” (p. 7) through teaching and environmental strategies. Indeed, Sylva et al. (2004) indicated their findings from The Effective Provision of Pre-school Education project (EPPE) that effective teaching should include “‘sustained shared thinking’ to extend children’s learning” (2004, p. 1). Development Matters guidance, within 30-50 months and 40-60 months age ranges outline key areas which support the development of higher order thinking skills. This documentation sets out a “typical range of development” (p. 35) with bands crossing over. Importantly the skill for critical thinking is embedded in the Early Years ethos and practice, which Development Matters (2012) documentation demonstrates. The development of critical thinking skills is important for young children which could be used within a P4C session - discussing and debating learning and behaviour differences, which in turn could improve acceptance and understanding.

Acknowledging all of the aforementioned literature the planned study aimed to address the following three research questions:

1. To what extent can a short P4C intervention change how children perceive others with special educational needs, and are effects maintained over time?
2. Do children think it is important to predict learning and behaviour differences, and do they think genetic screening has a role to play in this?
3. What can a Philosophy for Children (P4C) discussion teach us about children's understanding of the origins and implications of being different

Chapter 3

3. Methodology

3.1. Introduction

The primary purpose of the study was to find out how primary school children view learning and behaviour differences, and whether a brief P4C intervention could change their feelings, behaviour or thoughts. A second element of the study asked if children thought DNA predictors of learning and behaviour differences would be helpful or harmful.

3.2. Research Design

3.2.1. Overall approach

This research involved the design, development, and delivery of a P4C intervention focused on how children perceive those who are different to themselves in terms of how they learn and behave. In order to evaluate whether the intervention had an impact on children's thoughts, feelings and behaviour about others with SENDs an RCT design was chosen, and a process evaluation was carried out to shed light on its findings.

The main reason for using a P4C approach, above using other approaches such as circle time (which doesn't allow for debate or discussion across the circle) or circle of friends (which focusses on supporting one child's social and emotional skills), was having previously facilitated P4C sessions in an early year's classroom. I had observed young children becoming less egocentric (Grigoroglou & Papafragou, 2016), developing moral (Walker, 2012) and empathetic skills (Aslanimehr, 2015), and perceived the P4C ethos to allow

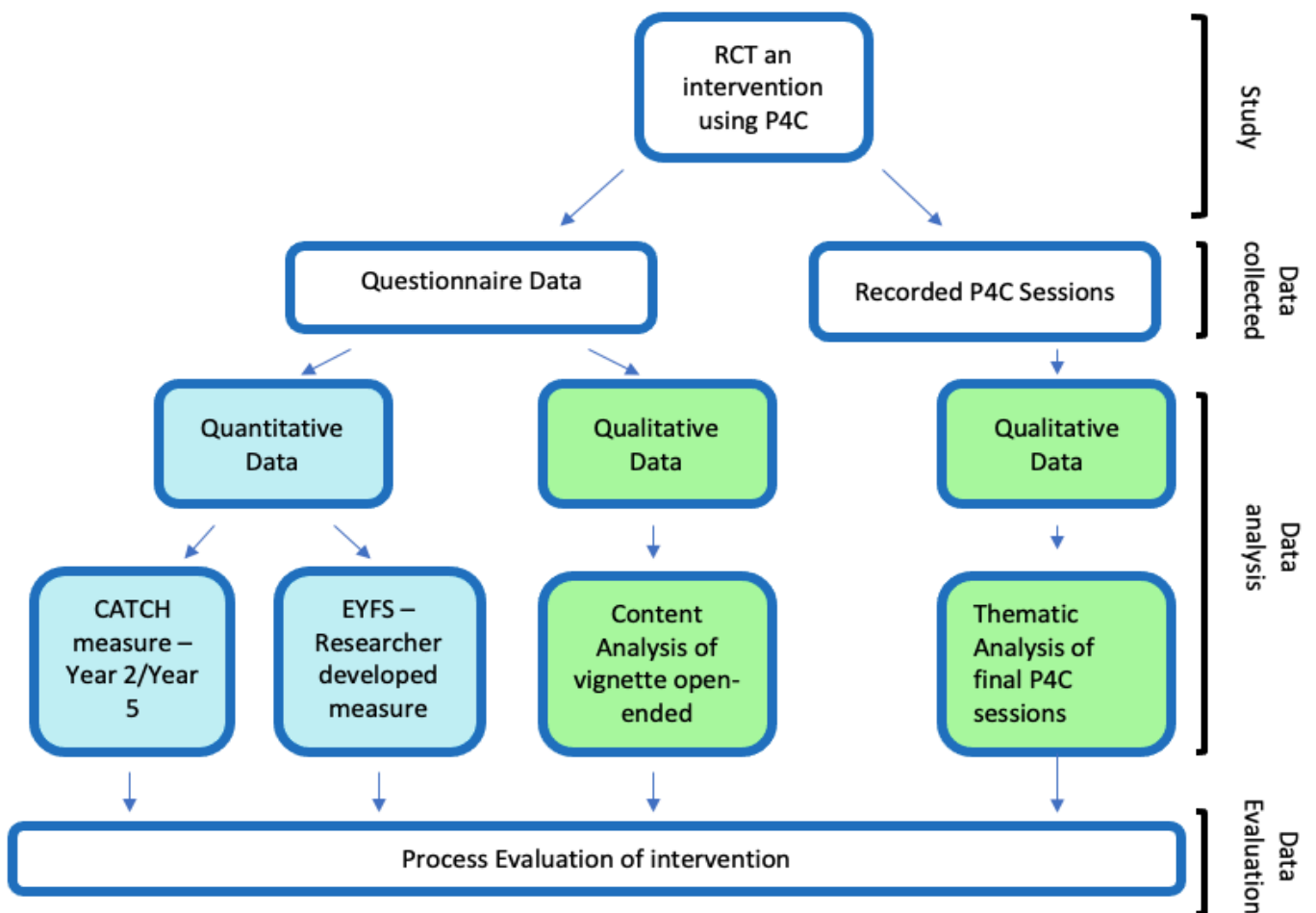
children to develop their social and emotional skills (Dasi et al. 2013). However, the concept from the Circle of Friends (Gus, 2000) of challenging stereotypical views and assumptions by providing appropriate factual information about children's diagnostic labels, was combined with the P4C idea of debate and discussion in a safe and caring environment. It was hoped that the combined approaches would enable peers to connect particular behaviours to differences, which they found hard to accept, but would also provide the opportunity to allay misconceptions and stereotypical perspectives.

Beyond this, qualitative data was used (the transcript from one intervention session and children's free-response views about DNA screening) to address the other research questions. In this sense, a multi-method approach was used.

Prior to starting the study in the schools, I conducted a feasibility study of the measures and materials to be used. A full description of this feasibility study and its findings can be found in section 3.3.1, after the intervention has been explained.

In order to assess children's attitudes towards others with learning or behaviour differences, I conducted a content analysis of qualitative data regarding children's perspectives of DNA screening for probability of learning and behaviour differences. I also conducted a thematic analysis of the final P4C intervention session which asked what could be learnt about children's perceptions about the aetiology of differences. This ensured that using "combinations and comparisons of multiple data sources, data collection and analysis procedures, research methods, investigators and inferences" would increase the research validity and reliability (Teddlie & Tashakkori, 2009, p. 27). An overview of the data collection methods and analysis is shown in Figure 3.1

Figure 3.1 Overview of data collection and analysis of study



3.2.2. The importance of child-friendly methods for amplifying children’s voices in research

Matthew Lipman originally established philosophy for or with children (P4C) in 1970. He was motivated by the work of psychologists such as Vygotsky and the philosopher

Socrates in the development of discussion within a group or community of people and this embodies the fundamental essence of P4C (Daniel et al., 2011).

The P4C goal is to enable children to listen to the views of other children and to support them to give their views in a logical, reflective manner in collaboration with others. Anderson (2016) explains how important P4C is for confronting beliefs with regard to understanding and ideas, particularly with regard to others in the P4C group and beyond. P4C is designed to promote a desire to know, develop analytical thinking skills and cultivate reasoning and discussion with a view to increasing children's knowledge and understanding. P4C therefore represents a novel and useful way to understand the development of children's thinking about difference and its (partially genetic) aetiology. Throughout a P4C session the teacher acts as the facilitator, initially choosing the stimulus, with the children choosing where the inquiry will lead.

There are also potential benefits to using puppets as a pedagogical tool for intervention, which arguably have not been fully taken advantage of by teachers and schools (Kröger & Nupponen, 2019). Puppets have the potential to change young children's attitudes and understanding of disability particularly when used in conjunction with other interventions which engage children in 'cooperative activities', such as P4C (Dunst, 2014, p.145). The current study employed the use of puppets to help the first author to build playful and relaxed relationships with the participants (Kröger & Nupponen, 2019) and to offer them an opportunity to freely and appropriately, express themselves (Korosec, 2013) about their perspectives of learning or behaviour differences and the potential of screening for them from infancy.

As the researcher I designed the EYFS measure of Attitudes to be used with children between the ages of 4-5 years. The reason for this was the CATCH measure, used for Year 2 and Year 5, was designed for ages 8 and upwards. The children within EYFS are at varied

developmental stages (DfE, 2021). As an experienced early years teacher, I recognised that communicating through reading and speaking may be difficult for some children. I designed the emoji board with the view that children, as long as they understood what was being asked of them, would be able to point to visual images of feelings which would include children with limited verbal and reading skills.

To our knowledge, this is the first study to ask children as young as 4 years of age what they think about a future in which adults could potentially screen infants for their increased likelihood of learning or behaviour differences. The study was designed using child-friendly methods (Aldridge, 2017) to elicit young children’s understanding of the aetiology of learning and behaviour differences, and their attitudes towards screening for the increased likelihood of them at birth. It was designed on the understanding that responsible research and innovation requires us to listen to children’s views when planning the future use of DNA-based data so that we can (a) establish principles to avoid harm, (b) put appropriate regulation in place that aligns with children’s perspectives (Convention on the Rights of the Child, 1989) and c) hear and act upon children’s views under the age of 10 years, as key stakeholders in these discussions (Bradwell, 2019).

3.2.3. Why an RCT?

There is a need to ensure innovative interventions are robustly checked for possible detrimental effects – as well as for more positive efficacy - in education (Torgerson & Torgerson, 2001). Using an RCT to measure the effectiveness of an intervention designed to change children’s attitudes towards other children with differences is viewed as a ‘Gold Standard’ (Cowen et al., 2017, p. 265) technique (Torgerson and Torgerson 2001, 2008; Connolly et al., 2018; Torgerson & Torgerson, 2013).

There are four key criticisms levelled at using RCTs in education:

- (1) that it is just not possible, on a practical level, to undertake RCTs in education;
- (2) that RCTs ignore context and experience;
- (3) that RCTs seek to generate universal laws of ‘cause and effect’; and
- (4) that RCTs are inherently descriptive and contribute little to theory (Conolly et al., 2018, p. 278)

It was important to bear these challenges in mind when designing and conducting the current study. In this case it did prove possible to undertake an RCT in education and this was reliant on good communication between the schools and researcher, promoting cooperation to solve practical problems. It also helps that I am a former Assistant head teacher at a large primary school and former SENDCo, having a clear understanding of how schools operate and strong planning skills for lessons and expected outcomes. The current study also sought to add context and experience to the RCT by conducting a process evaluation (see Chapter 5). Addressing the final criticism - that RCTs are inherently descriptive and contribute little to theory - I conducted a content analysis (see Chapter 6) and thematic analysis of the last P4C session (see Chapter 7). Both of these chapters add to the RCT’s contribution, by providing a deeper understanding of the children’s perspectives and developing theories about why children may hold certain views and ideas about others with learning and behaviour differences.

When undertaking an RCT, the process of randomisation to intervention and control groups reduces bias within the design, the RCT approach provides good internal validity (Ong-Dean et al., 2011, p. 31). There are, however, nine common threats to internal validity (Steeger et al., 2021) which this study aimed to mitigate:

- 1) problems with randomization,
- 2) missing information on attrition,

- 3) biased measurement from non-independent sources,
- 4) problems with reliability and validity of measures,
- 5) lack of intent- to-treat analysis,
- 6) incorrect level of analysis in clustered designs,
- 7) no baseline controls for outcomes,
- 8) non-equivalent groups at baseline,
- 9) differential attrition

(Gottfredson et al., 2015; Gupta, 2011; Murray, Taljaard, Turner, & George, 2020; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Shadish & Cook, 2009; Shadish et al., 2002; Wadhwa & Cook, 2019)

The current study was a small-scale exploratory pilot RCT. To mitigate problems with randomization, common threat number 1, for this study the class was the unit of randomisation and was therefore linked to the class teacher. Each class was checked for balance in terms of class composition and of teacher characteristics. Parents consented and children later provided assent to take part in the study and did not know if they would be part of the control or intervention class.

Although missing data is very common in education trials (Torgerson et al., 2013), common threat number 2, this study had less than 5% missing data which is “unusual” (Torgerson et al., 2013). This may reflect the good relationship I was able to build with the schools, and with the children, as well as the fact that this was a small study in which it was possible to be closely involved with all stakeholders.

Internal validity problem (4) of problems with reliability and validity of measures was mitigated by using a revised Chedoke–McMaster Attitudes towards Children with Handicaps (CATCH) measure (Armstrong et al., 2017). This measure was designed for children ages 8

years and over (15 years) and the subscales (Affective, Behaviour and Cognitive aspects of attitude) had been assessed to see if they fit a unidimensional Rasch model. This measure was used for Year 2 and Year 5 children who fit within the CATCH measures age band. EYFS children were provided with an age-appropriate measure developed by the researcher which covered similar content to the CATCH measure. See (Chapter 3 section 3.6.7) for further information. A content analysis and thematic analysis was undertaken to provide deeper meaning and understanding of the RCT outcome. Therefore, combining a content analysis and thematic analysis as part of the RCT - a 'cumulative program' (Deaton & Cartwright, 2018, p. 1) also helped to explain 'why things work' (p. 1) providing further internal validity.

As the current study only included two schools (running consecutively) there was no need to conduct an intention to treat analysis, common threat 5. If there were multiple schools and a number of researchers in the current study, then this would have been completed to avoid selection bias.

The design of the current study, common threat 6, was not clustered and therefore analysis was not needed to avoid biased standard errors.

Common internal threat number 7 indicates that having no baseline for controls can be detrimental to outcomes. This was not the case with the two schools in the study – where each class recruited approximately the same amounts of participants for the control and intervention groups.

Conducting pre-intervention testing for both control and intervention groups prior to the intervention indicated that there were no significant differences between control and intervention groups, internal threat number 8. See Chapter 3 for further detail.

There was no differential attrition between control and intervention groups, number 9 internal threat, both groups remained similar throughout the intervention. See MAR data (Chapter 4) for further detail.

Connolly et al (2018) suggest that RCTs can lack details around understanding the context and environment. This study addresses this issue with a process evaluation, reporting on fidelity to the study's design and compliance to the study's protocol, among other issues, improving understanding of how the delivery of the intervention may have affected the findings (Dawson et al., 2018). Reporting a process evaluation in the context of an educational RCT is highly important because it reports how and why the study achieved its result not just the outcome effects (Siddiqui et al., 2018).

3.2.4. The intervention

Participants randomised to the experimental group were invited to take part in a series of in-class Philosophy 4 Children (P4C) sessions focused on learning and behaviour differences. Children in the control groups were asked to continue either with their originally planned P4C session topics or to use the topic of environmental sustainability (texts were provided by the researcher), but to ensure that the concepts being discussed were not the same as the intervention. The questions the intervention sessions covered were as follows:

Session 1 'What Makes Me, Me?' What does my super-hero label say about me?

Session 2 'Differences' What is it like to know someone who is different – does it matter if others think or behave differently?

Session 3 'Knowing and loving someone who is different' What is it like to know and love someone who is different?

Session 4 'Differences from the inside or outside?' Are babies different to each other when they are born or do they become different growing up?

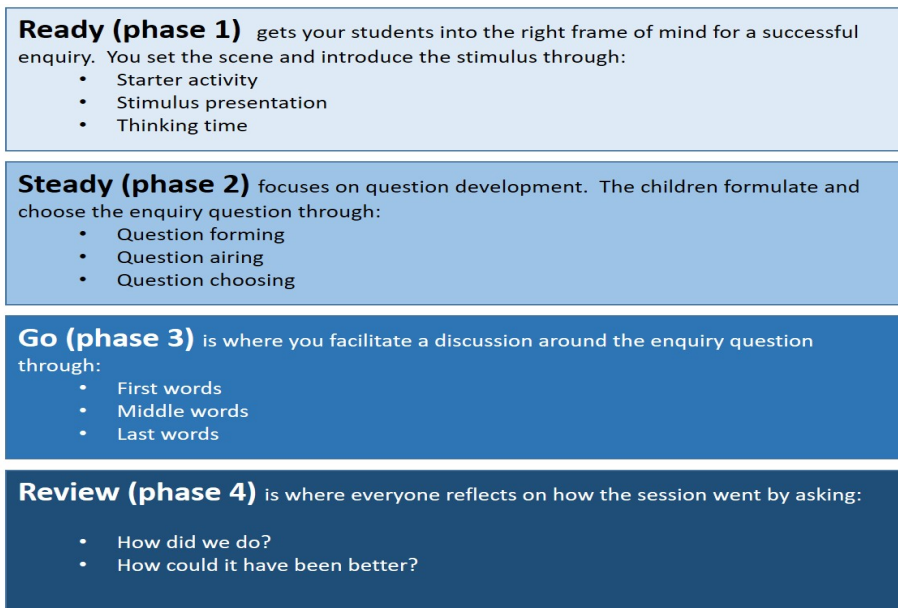
Prior to attending these sessions children were introduced to two grown up characters - ungendered shape-based puppets called Zig (with learning differences) and Zag (with

behaviour differences) through a series of differentiated books (EYFS and Year 2) and comic strips (Year 5) (See Materials and Measures). Zig and Zag were referenced during the pre- and post-test measures as will be described in Chapter 3. During the P4C sessions, which lasted up to 1 hour each, children were asked to discuss and debate the questions – with children directing dialogue and points of interest. Zig and Zag were present and visible at all sessions, as was the researcher (me) who observed, and audio recorded, the sessions in silence. The class teacher, who facilitated each of the sessions, ensured that inquiries supported children to be Critical, Creative, Collaborative and Caring, the 4Cs, in their dialogue (SAPERRE, 2021). Later, during data collection, the children were introduced to the idea of a new ‘baby’ shape called Zeggy, as part of the vignette questions that formed the data collection tool for the current study (See Chapter 3, section 3.6.8).

The set of four, up to 1-hour, weekly P4C sessions was adapted from published lesson plans, presented in a template which the teachers were used to planning with and delivered by the class teachers who were experienced primary school teachers who have delivered P4C to the age groups. All sessions were differentiated slightly (See Appendices 5-8 for exemplar session planning) and flexibility was given to the teachers around the facilitation and delivery of the session. However, in each session the overriding question and stimulus was kept the same to ensure consistency between schools (See Chapter 5, Process evaluation outcomes). Each class teacher from the intervention groups was provided with the books and planning 4 weeks prior to the intervention starting to give teachers plenty of opportunity to familiarise themselves with the context. Children in the control group also participated in 4 P4C sessions and books on the topic of sustainable environment were also provided to the control group teachers to use if they so wished. Control teachers were also offered training.

Implementing P4C 1 hour, weekly sessions, involved the following steps:

Figure 3.2 Retrieved from <https://dialogueworks.co.uk/philosophy-for-children-p4c>



Throughout the session the teacher acts as the facilitator, initially choosing the stimulus, with the children choosing where the inquiry will lead.

These sessions were informed by the session templates developed by SAPERE (Gregory & Brubaker, 2008) so that they would be instantly recognisable to these P4C-experienced teachers. A training session was offered to the teachers by the researcher about the expectations and outcomes of the P4C experimental sessions if schools indicated that they would find this helpful. Advantages to having the children's usual class teacher deliver the intervention were that it ensured the data is unconfounded by having an unfamiliar person leading the class, reducing the risk of a Hawthorne effect (Sedgwick & Greenwood, 2015). The researcher observed the sessions, and made field notes, adding context, and understanding to the audio recordings and to the process evaluation.

The following explains the content and development of each session:

Session 1: ‘What Makes Me, Me?’ What does my super-hero label say about me?

Prior to this session children in all year groups were given lanyards. They were asked to think of a superhero name which best described them. The lanyards were then to be used in all the intervention sessions. The children were encouraged to use the superhero names instead of their Christian names.

During this session the illustrated book ‘Don’t Call Me Special’, written by psychotherapist and counsellor Pat Thomas, was read to the children. This book

explored questions and concerns about disability in a simple and reassuring way. Younger children can find out what a disability is and learn how people deal with their disabilities to live happy and full lives (Thomas, 2002, blurb).

Whilst reading it, the children were then asked to think about what they were good at and what they found difficult. Children were asked to think about why they had chosen their superhero name, thinking about differences to be proud of, which was hoped would also lead onto a discussion of differences that were less appealing.

At a point chosen by the teacher, the idea that the super-hero name chosen might not be accepted by the group was introduced. Children were asked to suggest some reasons why this might happen, and if they could suggest ways they could ‘fix’ this super-hero so that it was ‘perfect’. The final reflective part of the session asked children to consider if they thought there can ever be the perfect super-hero or was it okay to make mistakes or be different.

Session 2: ‘Differences’ What is it like to know someone who is different – does it matter if others think or behave differently?

The second session was developed to facilitate discussion around differences and to ask the children what is it like to know someone who is different and if it really matters if others think or behave differently? The text chosen was a book called ‘Isaac and His Awesome Asperger’s Superpowers’, written by Melanie Walsh, “which explains Asperger's Syndrome in a simple, gentle and positive way to very young children” (Dowling, 2016, blurb). Children in the session were encouraged to think about knowing someone who might have these superpowers, to consider how it made them feel when someone tells you something about yourself you do not want to hear and to consider if they are being rude or if they could help what they were saying. The final reflection asked children to consider if what they had learnt would change what they thought or did about someone with these differences.

Session 3: ‘Knowing and loving someone who is different’ - What is it like to know and love someone who is different? The perspective of a family member

This third session used two stimuli. Reception and Year 2 were read a text called ‘We’ll Paint the Octopus Red’, written by Stephanie Stuve-Bodeen. The book tells the story of a little girl who is expecting the arrival of a new baby brother or sister and imagines all the things they can do together.

As six-year-old Emma anticipates the birth of her new baby brother or sister, she vividly imagines all of the things they can do together. Then when the baby is born, her dad tells her that it's a boy and he has Down Syndrome. Her dad tells her that as long as they are patient with him and help him when he needs it, there probably isn't anything Isaac can't do. Emma helps her father as much as he helps her to realize that Isaac is the baby they dreamed of (Stuve-Bodeen,1998).

Year 5 were read a page from a different text called ‘Views from Our Shoes: Growing Up with a Brother or Sister with Special Needs’ (Meyer, 1997), this collection of children’s reflections gave some insight into the feelings of siblings who have a family member with some type of difference.

Although two different texts were used, the session was developed to facilitate discussion around what the two characters felt about their siblings – was Emma (Octopus Red) right to worry about the things the baby might not be able to do? and how did Anne (Views from Our Shoes) really feel about her brother with cerebral palsy and if she was right to get angry or upset with him.

Session 4: ‘Differences from the inside or outside?’, Question: Are babies different to each other when they are born or do they become different growing up?

Session 4 was developed to facilitate children’s philosophical dialogue in order to gain an understanding of their perceptions of the aetiology of individual differences. The question for the session was ‘Are babies different to each other when they are born, or do they become different growing up?’ The context for the session was an 8-minute BBC clip entitled Same but Different, Life with Down Syndrome: Alexandra's Story, which shows the life of a little girl called Alexandra, who has Down syndrome, told by her sisters. Alexandra is one of a set of triplet sisters. Her two sisters, Alicia and Felicia, look the same as each other (monozygotic) and Alexandra is different. As Alexandra is different to her sisters the session aimed to get children thinking and discussing why Alexandra was different to her sisters, and where those differences originated from. Using a video clip was intended to ensure ‘high cognitive activity necessary for active learning’ (Cruse, 2006, p. 3).

Each session was recorded using two digital audio-recorders during the P4C sessions and transcribed verbatim, and anonymised. The advantages to this process were that it ensured the data was unconfounded, the children were familiar with their teacher, and this aimed to reduce a Hawthorne effect. I was able to observe the sessions, and make field notes, which added further depth and context to the audio recordings.

Figure 3.3 indicates a sample plan, used in both School 1 and School 2, of the fourth P4C session planning guidance (used with Chapter 7 teaching). See Appendices 5-8 for exemplar lesson plans

Figure 3.3 Adapted from *Early Years/Foundation Stage – Sarah Stanley SAPERE Handbook to accompany the Level 1 P4C Foundation Course (5th Edition), 2016*

PLEASE USE AS GUIDANCE

Title Session 4 Tuesday 26 November	'Differences from the inside or outside?' Original Session 4: Why are some people different? (nature or nurture). Explore causes of difference and free choice in how you behave (e.g. something inside you?) New Session 4: Are babies different to each other when they are born or do they become different growing up?
Stimulus	BBC Teach – PSHCE KS2: Same but Different What is the same/different about the sisters? Why are some people different? What do you think causes people to be different/learn differently/behaviour differently?
Stimulus details	BBC Teach programme (7 minutes long approx.) Records the views of all three siblings
Year Group	Year 2/Year 5
Skill focus	Using Reasons
Thinking focus	Valuing the use of reasons to support suggestions
Preparation	Reception Watch Youtube video of Same but Different Warm up: Year 2/Year 5 Big Question: Can a person be perfect? Think Pair Share, Discuss.
Presentation	This activity should be done as whole class activity to watch the video clip (Reception could be split into two groups for discussion time – to reduce waiting time within group)
Conversation and Thinking time	Reception/Year 2/Year 5 What did you notice about the video clip? (sisters were happy, enjoying life and activities) What was the same about the sisters? What was different? What do you think caused the sisters to be different? Do you think their activities makes them different/similar? What do you think the sisters think and feel about each other?
First words	Do you know anything about Alexandra's disability?
Building	Explore causes of difference and free choice in how you learn/behaviour (e.g. something inside you?)
Last words	Reflect on discussion – what have the children enjoyed about the discussion (Reception/Year 2 to use smiley cards ... I enjoyed the session because, I listened well to the other children's ideas ... I could think of my own ideas ... I changed my view because ...) Year 5 How well did we listen and whose ideas did we appreciate in particular? How, if at all, have individual members been affected in terms of their viewpoints and opinions?
Questions for Facilitator to reflect on	What will you think/do when you work with someone who is different?

3.2.5. How teachers were trained

School 1 did not want training but wanted to make the sessions more philosophical – the head teacher spoke to me and requested that teachers be allowed to do their own planning.

I agreed to this so long as the overall question and stimulus remained unchanged for each session – how the teacher got the children to discuss and answer the question was then left open. Chapter 5 (Process Evaluation) explains the outcomes of school 1 (Compliance and fidelity to the intervention). At school 2 the P4C lead arranged a meeting with me and each of the teachers (working 1:1) to discuss the planning/resources and possible outcomes from the sessions.

3.3. Participants

3.3.1. Feasibility study

A feasibility study was conducted to test the acceptability of the measures to children within the same age ranges. Participants in the feasibility study were recruited via personal contacts from the thesis supervisor and TAP member. Participants came from three different primary schools in the York/Harrogate areas. Four female participants, two aged nine (end of year 4), one aged eight (end of year 3) and one aged six (end of year 1) took part.

The feasibility sample were either the year above or below the eligibility criteria for the P4C study, which requires a practising Philosophy for Children school and focuses on children in Years 5, 2 and EYFS (Reception). This was acceptable as children work within a range of age-related expectations for their year groups (Hall, 2016).

3.3.2. Main study

The first round of email invitations was sent to four bronze, three silver and two gold award SAPERE (Society for the Advancement of Philosophical Enquiry and Reflection in Education) P4C schools, in September 2019. Schools were chosen because they had made a commitment to P4C through entering into a whole school programme, with bronze the starting point of the pathway. After following up with emails and telephone calls to the

school's administrative offices, and receiving no responses, the strategy was changed to writing letters to named head teachers or SENDCos, marked private and confidential. This strategy proved more fruitful – with 2 schools accepting and requesting formalised meetings to set an intervention timetable (See Appendix 1 and 2 for School timetables).

Participants were 165 children recruited from two primary schools in the north of England ($n = 63$ Early Years Foundation Stage (EYFS, age 4-5, 55 Year 2, age 6-7 and 47 Year 5, age 9-10). School 1 participants were recruited in the Autumn term 2019 ($n = 111$) and School 2 participants in Spring term 2020 ($n = 54$). In school 1, 3 participants returned consent forms after pre testing and the intervention had begun. There was 1 participant from school 2, who also returned the consent form after the intervention had begun. Only schools which had already embedded P4C within their curriculum were eligible because it was important that both the teachers who would deliver the intervention and the pupils who would take part in it were familiar with the P4C approach. It was also important that these were two-form entry schools so that one class could be randomly designated as the intervention group and the other as the control group. Table 3.1 shows full details of the sample:

Table 3.1 *Sample recruited from two schools with embedded P4C ethos*

Year Group (2 classes per group)	School 1 Intervention Control	School 2 Intervention Control	Combined S1 & S2 Intervention Control
EYFS/Foundation 2/Reception	N = 19 Intervention N = 23 Control	N = 8 Intervention N = 13 Control	N = 27 Intervention N = 36 Control
Year 2	N = 20 Intervention N = 20 Control	N = 10 Intervention N=5 Control	N = 30 Intervention N = 25 Control
Year 5	N = 18 Intervention N = 11 Control	N = 9 Intervention N = 9 Control	N = 27 Intervention N = 20 Control
		Total	N = 84 Intervention N = 81 Control T = 165 children

3.4. Recruitment of Participants

3.4.1. Recruiting a school

Recruitment to the study began in the summer term 2019. The criteria for the study was restricted to the requirement of a practising P4C school as it takes 18 months to embed this ethos into a school, and achieving a Gold P4C award, the top standard of practice, can take between 2-3 years (What is P4C?, 2021). The current study required only a short intervention of 4 weeks, so was a requirement that the recruited school already practised P4C weekly, and children knew the expectations and requirements of sessions. This also reduced the burden of participation on the school.

It was, however, difficult to recruit P4C schools from the local area due to these requirements. Emails advertising the study were sent to schools that had attained either bronze, silver, or gold awards for P4C practise, in Hull, Doncaster and the East Riding.

A difficulty encountered by emailing schools confirmed a ‘gatekeeper’ experience as school email addresses go to the administrative team and not to either the Head Teacher or the P4C lead. However, one primary school with a double cohort intake agreed to preliminary talks with the caveat that the study would not increase their time and commitments. This was possible because of a personal contact with the Executive Head Teacher. The initial meeting where materials and a thorough discussion of the process proved positive, but after further discussion between the Executive Head, Head of School, and the Lead for P4C the school decided that participating would mean that they were overcommitted for the forthcoming year 2019/20. One other school from the Doncaster area, also showed great interest but, after further email correspondence did not provide a firm commitment to participation. Contact with SAPERE trainers also did not been fruitful.

Recruitment to the study commenced again in September 2019 and was expanded to cover areas with more schools undertaking P4C as part of the curriculum, such as Sheffield.

On 13 September 2019 seven invitation letters were posted to P4C schools, six based in Sheffield and one based in Selby. From that round of invitations two schools from Sheffield agreed to participate. See Appendix 3 for School Invitation letters. School 1 agreed to participate in the Autumn term of 2019 and School 2 agreed to take part in the Spring Term 2020. It was fortunate that post testing data collection was completed before the start of the coronavirus pandemic in March 2020, however delayed post testing data for School 2 was not collected due to the pandemic.

The characteristics of School 1 comprised of 14.6% of KS2 children who are disadvantaged, 6% of children had English as an additional language (EAL), and 1% of children with special educational needs (SEN) with a statement or Education health and care (EHC) plan. Initially, a meeting was set up with School 1 in on Monday 30 September 2019. The Head teacher, SENDCo and Assistant Head were present and, after looking at the resources and materials, agreed to sign the research contract. Between 30 September and 14 October 2019, the Head teacher sent out invitation letters to parents with a covering note to say the school were happy for the study to go ahead; invited their children to take part in the study and collected returned consent sheets for the researcher. A detailed timeline was also sent to the school - See Appendix 1 for School 1 timetable.

The characteristics of School 2 comprised of 30% of KS2 children who are disadvantaged, 9% of children had English as an additional language (EAL), and 2% of children with special educational needs (SEN) with a statement or Education health and care (EHC) plan. School 2 also agreed to look at the resources and sign the research contract at an initial meeting on Monday 2 December 2019, with a view to starting the study on Monday 13

January 2020. This meeting was held between the researcher and school P4C leader.

Between 2 December 2019 and 13 January 2020, the school sent out invitation letters to parents inviting them to take part in the study and collected returned sheets for the researcher - See Appendix 2 for School 2 timetable. During this time the school monitored consent form returns and also highlighted the study in parents' evenings held during December 2019.

Once consent forms had been returned to the schools, I was able to work with the administrative teams to collate consent forms for the control and intervention classes. See Appendix 4 for Parental Consent Form.

3.4.2. Concealed randomisation

A key factor when using RCT methodology is to ensure randomisation. In the two study schools one class per year group was randomly allocated to either the Control or Intervention condition prior to parents consenting for children to take part in the study. This was important so that any parent consenting for their child would not know which group their child was assigned to. Usually, concealed allocation is undertaken in a study with multiple schools. However, concealed allocation was not undertaken primarily because the trial was small scale and was being completed by one researcher, and this person would have to undertake all the study administration for the study. However, to avoid bias parents were not informed which class had been assigned to the Control or Intervention condition. Generally, schools try to ensure class equivalence in terms of underlying differences of the characteristics of the children (eg. SEND, Free School Meals (FSM), Male, Females, number of children in the class). Only children whose parents gave consent were included in the study, although all children took part in the class whether they were in an intervention or control group.

3.4.3. Linked class randomisation

The unit of randomisation was the class within a cohort of 2 classes within EYFS, Year 2 and Year 5. The intervention was delivered by the class teacher who was linked to the randomised class. It was necessary to link the classes to the teachers before randomisation, it was also necessary to specify, before randomisation, the class and teacher who were to be sampled to stop “teacher level selection bias” (Torgerson et al., 2013) where teachers chose themselves to teach either the control or intervention groups.

Mimicking reality (Torgerson & Torgerson, 2013) this enabled the schools to put forward the best linked teacher-class combination, ensuring a balance of child characteristics and teacher characteristics. Therefore, all children stayed in their usual class and randomisation of the children to the class relied on the parents from each of the classes (control and intervention) independently consenting for their child to take part in the study, reducing bias. Classes were randomised by choosing the surnames of teachers of the class and assigning either intervention or control to them. Using surnames meant I did not know the gender of the class teacher.

3.5. Materials and Measures

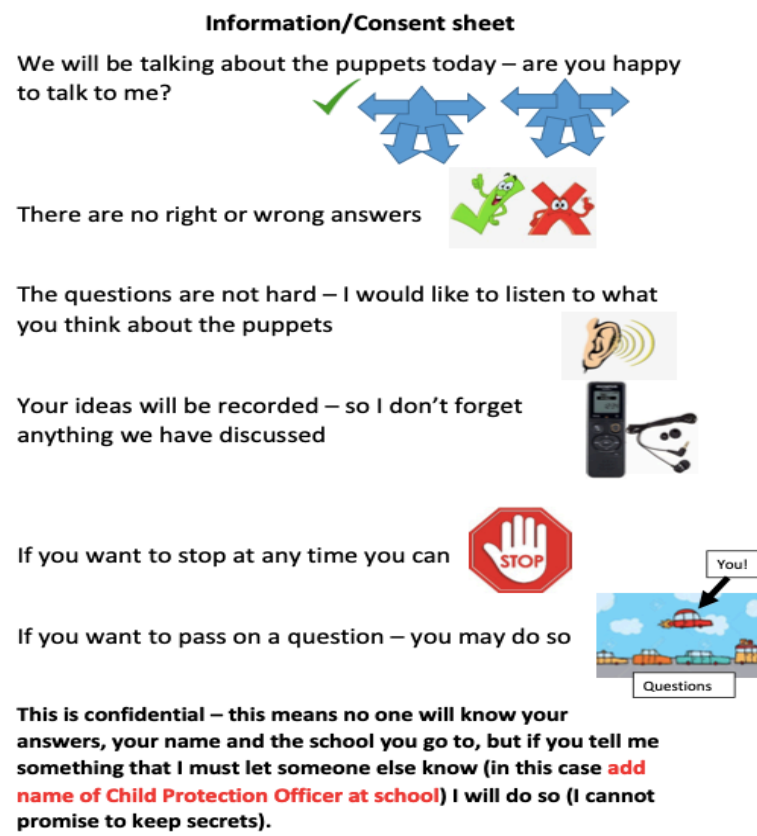
3.6. Preparing for Intervention

3.6.1. Assent

This aspect of the study was extremely important to get right, and central to the current study because of the centrality of children’s voices to the research. However, there were some challenges when asking for assent from children, which are particularly common in school settings (Kirby, 2020) namely: ensuring children understand what is being asked of them (Loveridge & Cornforth, 2014), and that children have the right to say no to

participation at any point in the study (Heath et al., 2007). I tried to ‘remain sensitive and open to the possibility that participants may wish, for any reason and at any time, to withdraw consent’ (BERA, 2018, p. 9). I did this by observing children’s “less easily ‘heard’” dissent (Bourke & Loveridge, 2014, p. 154) through their verbal and non-verbal communication/expressions of fidgeting with things, being distracted by other things happening around the area and choosing to not respond. In helping the children to understand what was expected and to understand the concept of the questions the use of the characters Zig and Zag, books, comic strips and a pictorial assent sheet were used (Figure 3.4). The pictorial assent sheet was used prior to working 1-1 with EYFS children and before the Year 2 and Year 5 children undertook pre, post and delayed post testing. Prior to each of the P4C intervention sessions, the children were told that the sessions would be recorded and the data from those children who had not consented to take part would not be used by me (the researcher).

Figure 3.4 Assent sheet shown and discussed with all children consenting to take part in the study

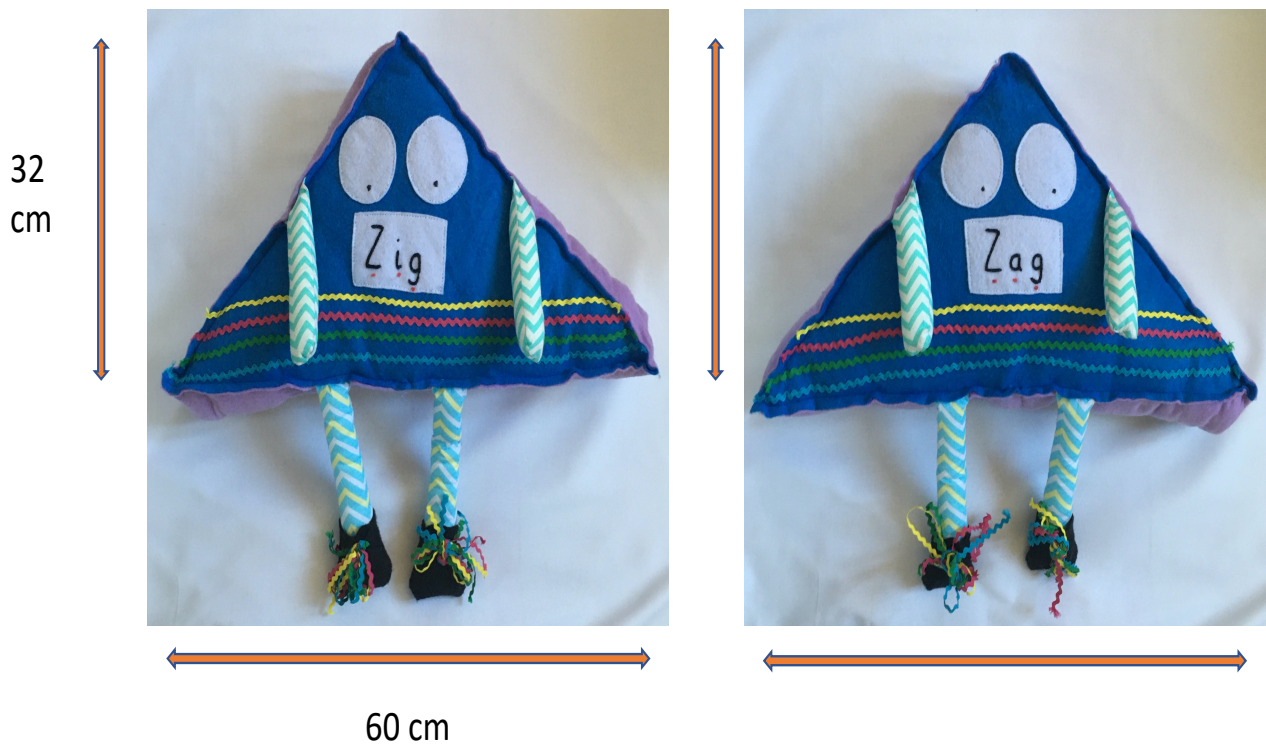


3.6.2. Zig/Zag characters

The puppet characters, identical triangular puppets without gender (Ablow & Measelle, 2005) - Zig (with learning differences) and Zag (with behaviour differences) - were designed to look the same, other than their name labels which were simple and phonetically, accessible to very young children. The characters were soft, tactile, large and huggable, which created a pleasant atmosphere for the child to express their opinions about learning and behaviour differences and reduced the influence that ‘gender, race and physical appearance’ (Quakley et al., 2004, p. 52) can have on children’s behaviours. The character’s arms and legs were stuffed and filled with bells, which made a sound when they were moved. Each character had laces on their shoes which could be tied and retied (if the child wanted to fiddle whilst taking part in the study). The sound aspect and tactile nature of the characters were designed to appeal to and include all children. The characters were referred to as ‘it’, ‘they’ or ‘them’.

The puppets Zig and Zag were used to help these very young children elicit, and to discriminate their thoughts, feelings and behaviour (Quakley et al., 2004) when answering a series of short questions around behaviour and learning differences. Gaining the views of children can be very difficult in general two-way conversations, so the use of puppetry as a tool to gain the self-reported views of children aimed to help children “identify, clarify and verbalize their feelings” (Epstein et al., 2008, p. 49).

Figure 3.5 Zig (learning differences) and Zag (behaviour differences) character measurements



3.6.3. Books

The book – Zig’s Day at School – explained how Zig struggles with learning and presented the puppet in various scenarios during the school day. Each page presented a different difficulty which may present in someone with learning differences. For example:

1. Zig talks with babyish words
2. Zig can’t order numbers
3. Zig finds writing a name difficult
4. Zig sounds out slowly when reading
5. Zig doesn’t understand the rule of the game
6. Zig can’t remember stories

The children were told that Zag struggles with behaviour, it also explained to the children through the format of an A4 book indicating pictorially and in writing the following scenarios, which may be present in someone with behaviour differences.

Zag’s day at school (each page showed a different difficulty):

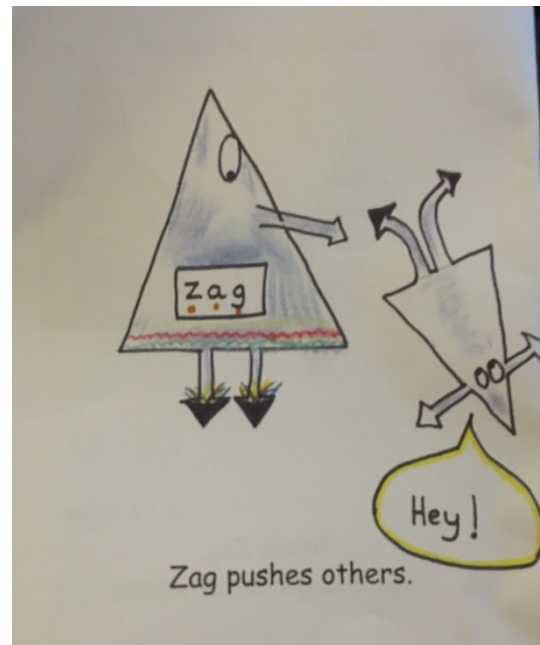
1. Zag pushes others
2. Zag doesn’t listen
3. Zag scribbles on shape’s work
4. Zag is still playing at tidy time
5. Zag is noisy
6. Zag is jiggly on the carpet

Figure 3.6 a) Monday – Zig’s Day at School EYFS book, b) Monday Zag’s Day at School EYFS book

a) Zig



b) Zag

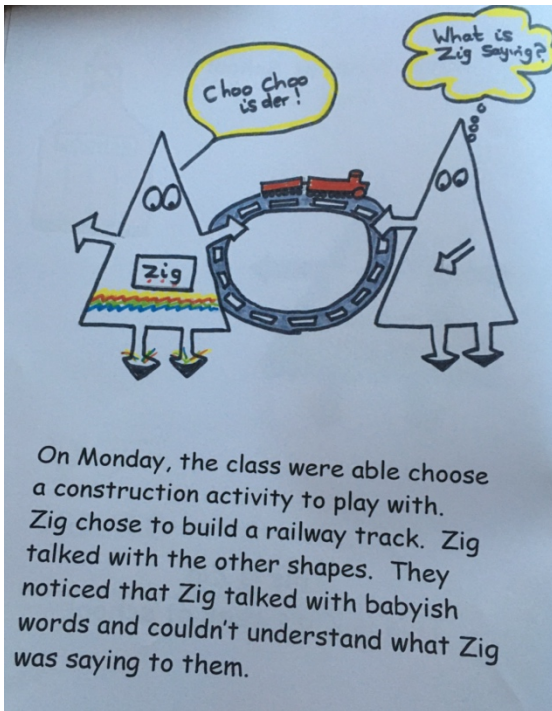


The books were designed to be read either working 1-1 with a child, in pairs, small groups or at the front of the class/group. Above are examples of the EYFS books of the Monday – Zig’s day at school and Monday – Zag’s day at school, EYFS books, are shown above. The full books are shown in Appendices 9 and 10.

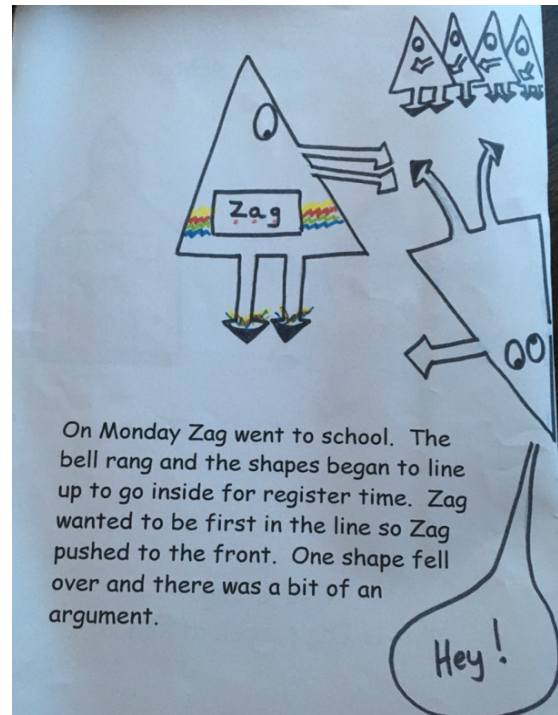
Year 2 were presented with a differentiated books for Zig and Zag, which provided more of a story for each day, and appropriate for the reading ability/age of children in Year 2. An exemplar of the Monday – Zig’s week at school and Monday - Zag’s week at school, Year 2 books, are shown below. The full books are shown in Appendices 11 and 12.

Figure 3.7 a) *On Monday... Zig Year 2 book*, b) *On Monday...y Zag Year 2 book*

a) Zig



b) Zag



Adomat (2014) suggests that using books to explore differences and disability can have an impact on children's understanding and empathy towards those with differences. Using a book format to show learning and behaviour differences in a context which is meaningful to children. Gilmore and Howard's (2016) review suggest that books can advocate understanding of learning and behaviour differences, promote acceptance and reverse misconceptions and stereotyping (Gilmore & Howard, 2016).

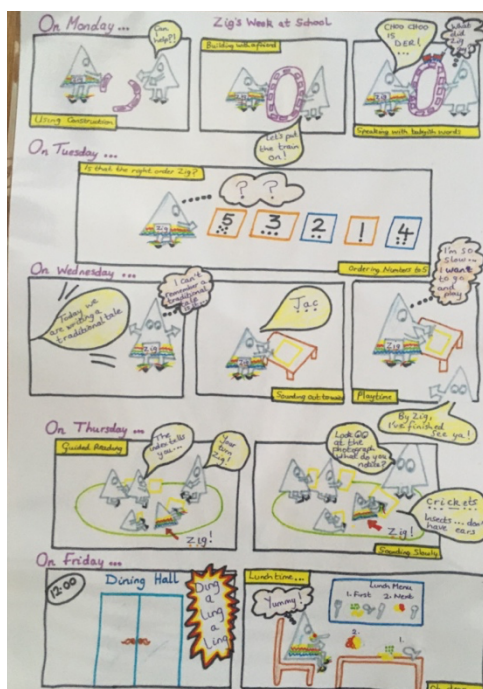
3.6.4. Comics

Using a comic strip to depict the daily school life of the character Zig (with learning differences) and Zag (with behaviour differences) was aimed at Year 5 children. Each day at school demonstrated something that happened and how the characters responded in certain situations. These actions were based on phenotypic symptoms of learning and behaviour differences. Designing a comic strip version of the Zig and Zag characters for Year 5 was intended to appeal to them in a fun way, but also to be easily read (McGeown et al., 2020).

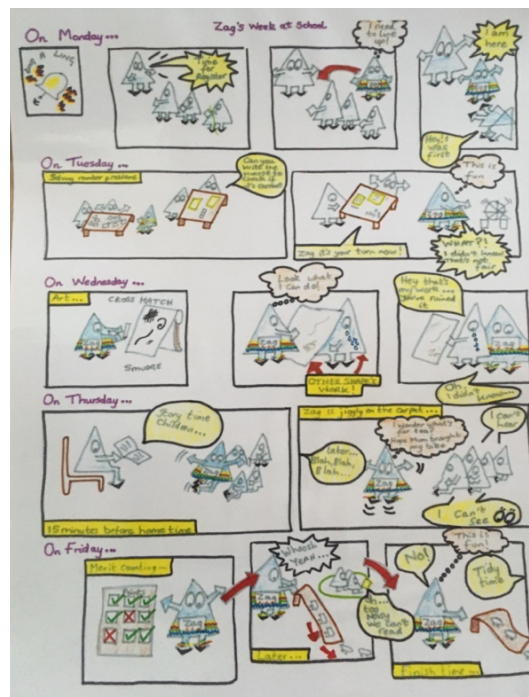
The comic strips shared the same storyline as the EYFS books and Year 2 books (which were differentiated for reading ability) and aimed to show a real-life situation (Koutniková, 2017) which engaged the children in thinking about Zig and Zag’s situation and to encourage the children to analyse their feelings and attitudes towards the characters, a difficult and sensitive topic (Public Libraries Singapore, 12 March, para. 6).

Figure 3.8 a) Year 5 Comic Strip – Zig’s Week at School (Learning Differences) b) Year 5 Comic Strip – Zag’s Week at School (Behaviour difference)

a) Zig



b) Zag



3.6.5. Measure for Year 2 and Year 5

The Chedoke-McMaster Attitudes towards Children with Handicaps scale (CATCH) was chosen as a measure for this study because it measures children's attitudes towards disability.

The Chedoke-McMaster Attitudes Towards Children with Handicaps Scale (CATCH) measure was used at pre-, post-test and post-test (delayed). Components measured within the scale are affective, behavioural and cognitive attitudes towards disability. Vignes et al. (2008) suggest the CATCH instrument is "the most complete instrument among those identified in this review, as they measure all three attitude components" (p. 188). Study 1 used an updated 36-item scale English version (Armstrong et al., 2017), which was used to measure children's affective, cognitive, and behavioural attitudes towards peers with disabilities, aged 8 to 11 years.

The CATCH is comprised of 28 items. Each subscale (affective, behavioural intention, cognitive) has 8, 8 and 12 items respectively, and each item has five response options (strongly disagree, disagree, can't decide, agree, and strongly agree). Negatively worded items are reverse scored for analysis (Armstrong et al., 2017).

'Validity is defined as the extent to which a concept is accurately measured' (Heale & Twycross, 2015, p. 76). Using an updated Chedoke-McMaster Attitudes towards Children with Handicaps (CATCH) measure (Armstrong et al., 2017) and totalling each of the three subscales separately meant that the data should be reliable and valid. Armstrong et al. (2017) suggested using two of the revised subscales, - affective attitudes and behaviour intentions, - when investigating if an intervention had affected children's attitudes towards others with differences. As the final subscale, cognitive aspect, was still not unidimensional after the

Rasch analysis it was suggested to treat this subscale with caution and not to total all of the aspects.

Rasch analysis was used to check if it was reasonable to add all the subscales together as one score. The factors which are essential in composing a rigorous attitude measure include:

- (1) response category function and ordering (whether item response categories are working as intended);
- (2) response dependence (whether the response to one item has a direct implication to the response to any other item); and
- (3) differential item functioning (DIF) (a form of item bias that assesses whether participant subgroups respond differently to an item, despite being at the same level of the underlying trait) (Armstrong et al., 2017, p. 282).

The current intervention used the updated version of the CATCH measure (Armstrong et al., 2017) which recommended totalling each aspect of attitude independently to ensure validity and reliability (Heale & Twycross, 2015). This was because two of the subscales, affective and behaviour, fit into a unidimensional Rasch model and the cognitive aspect of attitude did not. Armstrong et al. (2017) suggested that the cognitive aspect of attitude should be used with caution as it might not accurately reflect children's attitudes. In summing the individual aspects of attitude, the current study, therefore, summed each item separately and took note of the caution made for the cognitive aspect of attitude.

3.6.6. Changing terminology of the CATCH Measure

To reduce ‘ableist language’ (Bottema-Beutel, 2021) and avoid terms such as ‘disabled’ (Algraigray & Boyles, 2017), I further updated the English CATCH measure (Armstrong et al., 2017) terminology, which had already been altered from as the original ‘handicapped’, to the ‘gender neutral’ format of the puppet’s names of Zig and Zag. Table indicates an exemplar of how the measure was altered. Items coloured in yellow show affective and behaviour scales (which fit the Rasch model) and the green coloured items the cognitive aspect (which didn’t fit the Rasch model). The full subscales can be seen in Appendix 13.

Table 3.2 Adapted CATCH Scales from Supplementary File (Armstrong et al., 2017) highlighting adapted items posed on Qualtrics Questionnaire to Year 2 and Year 5 Children

P4C study highlighted yellow = revised affective and behaviour scale (to keep).		Cognitive scale = remains the same		
Item Number	Subscale	Original Item	Adapted Items	P4C Study – 1)Zig 2)Zag
1	Affective Negative	I wouldn’t worry if a handicapped child sat next to me in class	I would worry if a disabled person sat next to me at school	I would worry if Zig and Zag sat next to me at school
2	Behavioural Positive	I would not introduce a handicapped child to my friends	I would introduce a disabled person to my friends	I would introduce Zig and Zag to my friends
3	Cognitive Positive	Handicapped children can do lots of things for themselves	Disabled people can do lots of things for themselves	Zig and Zag can do lots of things for themselves
4	Behavioural Negative	I wouldn’t know what to say to a handicapped person	I wouldn’t know what to say to a disabled person	I wouldn’t know what to say to Zig and Zag.
5	Cognitive Positive	Handicapped children like to play	Disabled people like to play	Zig and Zag like to play
6	Affective Negative	I feel sorry for handicapped children	I feel sorry for disabled people	I feel sorry for Zig and Zag
7	Behavioural Positive	I would stick up for a handicapped child who is being teased	I would stick up for a disabled person if they were being teased or bullied	I would stick up for Zig and Zag if they were being teased or bullied
8	Cognitive Negative	Handicapped children want lots of attention from adults	Disabled people want lots of attention	Zig and Zag want lots of attention
9	Behavioural Positive	I would invite a handicapped child to my birthday party	I would invite a disabled person to my party	I would invite Zig and Zag to my party
10	Affective Negative	I would be afraid of a handicapped child	I would be afraid of a disabled person	I would be afraid of Zig and Zag

3.6.7. EYFS alternative to the CATCH measure

Reception children’s attitudes towards learning and behaviour was measured using a scale developed by the researcher. This was because the CATCH measure was only suitable

for children from the ages of 8 years and onwards. The variables were designed to generate Affective (2 items), Cognitive (2 items) and Behavioural intentions (1 item) scales, in a similar format to the CATCH measure. Children was asked to choose 5 words/emojis from 10 positive and 10 negative options to describe their attitudes towards learning and behaviour difficulties.

Figure 3.9 a) Zig question and emoji recording sheet, b) Zag question and emoji recording sheet

a)

b)

Zig - pre intervention

Name: _____

	E 1	E 2	E 3	E 4	E 5
How do I describe Zig? (Affective)					
How does Zig feel (at school/most of the time?) (Cognitive)					
How do I feel about Zig? (Affective)					

Is Zig like me? (Cognitive) YES NO SOMETIMES
(circle answer)

Would I want to be Zig's friend? Can you say why? (Behavioural)
(audio record - observe physical behaviour here)

Why did you choose those words? (Cognitive)
(audio record - observe physical behaviour here)

Zag - pre intervention

Zag - pre intervention

Name: _____

	E 1	E 2	E 3	E 4	E 5
How do I describe Zag?					
How does Zag feel (at school/most of the time?)					
How do I feel about Zag?					

Is Zag like me? YES NO SOMETIMES
(circle answer)

Would I want to be Zag's friend? Can you say why?
(audio record - observe physical behaviour here)

Why did you choose those words?
(audio record - observe physical behaviour here)

Ten positive and ten negative emojis were presented to the children (Figure 3.10) and discussed (for understanding) prior to answering the questions to ensure their understanding and meaning. Children were asked to select the 5 emojis, by pointing at the emojis, which best described Zig (learning differences) and Zag (behaviour differences) when answering the following questions. I then recorded their responses on the sheets above (Figure 3.9) in the boxes marked E1, E2 etc.

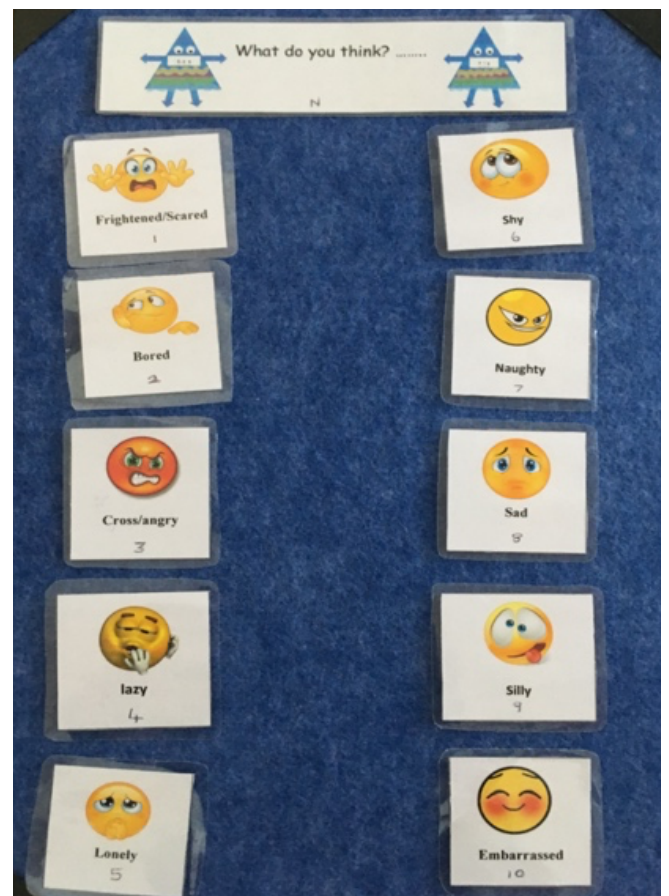
The children were then asked about Zig and Zag separately:

How do I describe (Zig/Zag)?

How does Zig/Zag feel (at school/most of the time)?
How do I feel about Zig/Zag

Children were also asked if Zag/Zag was like them, if they wanted to be Zig/Zag's friend, and why they chose the emojis.

Figure 3.10 10 positive (P) and 10 (N) negative emojis children used to describe Zig and Zag: P1 = Happy, P2 = Kind, P3 = Cheerful, P4 = Excited, P5 = Clever, P6 = Energetic, P7 = Relaxed/Calm, P8 = Sympathetic, P9 = Loving, P10 = Brave, N1 = Frightened/Scared, N2 = Bored, N3 = Cross/angry, N4 = Lazy, N5 = Lovely, N6 = Shy, N7 = Naughty, N8 = Sad, N9 = Silly, N10 = Embarrassed.



The rationale for using emojis within this measure was to ensure that all children could access recognise (Glosson, 2021) and express their perceptions without having to verbalise their emotions (Dunlap et al., 2016).

3.6.8. Measures at Post-intervention testing

The CATCH measure and measure designed by the researcher for EYFS were re-administered. A new measure was also added: Children in EYFS, Year 2 and Year 5 were asked to complete several exploratory items about genetic inheritance with three response options of (yes, not sure, no) and an open question. These exploratory items were designed to elucidate the children's understanding of genetic inheritance through a series of small vignettes.

Children in Year 2 and 5 responded to the vignettes in writing, as part of an online questionnaire, while I worked verbally 1:1 with the youngest children, recording and transcribing their responses. The vignettes and questions were as follows:

- When Zig or Zag grows up it falls in love with another shape called Zog. They have a beautiful baby shape called Zeggy. They worry that baby Zeggy might find learning or behaving properly tricky like Zig/Zag. **Do you think they should be worried about this?**
- They hear that you can find out whether there is a good chance of baby Zeggy finding learning or behaviour tricky by going to the doctor for a test that doesn't hurt a bit. **Do you think they should do this?**
- If you were Zig, Zag or Zog **would you test baby Zeggy?**
- What do you find tricky at school? If you'd had a test when you were a baby that showed you would find this tricky **do you think you, your family or your school might have been able to do anything about it?**

Responses were subsequently coded inductively. To check validity and reliability of the content analysis coding Cohen's Kappa was used to measure level of agreement between raters, with 0 indicating no agreement and 1 indicating perfect agreement. Syed and Nelson (2015) suggest the following levels of agreement: $k = 0.01-0.20$ none to slight; $0.21-0.40$ fair; $0.41-0.60$ moderate; $0.61-0.80$ substantial; and $0.81-1.00$ almost perfect agreement. In this study the initial average kappa = 0.75 agreement. Cohen's Kappa and the results of this analysis are shown in Table 5.1, Chapter 6.

3.7. Procedure

3.7.1. Data Collection

3.7.2. Timetabling of intervention

Prior to working with the children, a timetable was discussed and agreed with all the teachers from both schools. The timetable outlined the dates and days the intervention would take place (See Appendices 1 and 2 for both School 1 and School 2 agreed timetables).

There was some flexibility about the day on which the intervention took place during the week, and this allowed for unforeseen changes to the class timetable to be accommodated.

Some alterations were made to the planned timetable in School 1, where the teacher was unable to facilitate the intervention on the planned day but could do it at another time during the week.

3.7.3. Pre-Test

As well as gaining parental consent for these children to participate I also sought the individual child's assent. As mentioned previously, children were shown a pictorial consent sheet (Figure 3.4) and asked whether they wanted to continue with the study. Two children, 1 from School 1 and 1 from School 2, chose not to take part in the intervention. The child in School 1, a neurodiverse non-verbal child, began the intervention enjoying the characters Zig and Zag, but lost interest very quickly (I observed the child's body language and pre-occupation with other things) (Kirby, 2020). The second child, from School 2, also began the session but decided not to continue. This child got visibly upset and began to look downwards. I asked if they wanted to go back to the classroom and they nodded. The child was told that it was perfectly okay not to take part and were escorted back to their classroom. It was also explained to the teacher of the class that the child was okay to say no to taking

part (Kirby, 2020). Pre-test data was not shared with the teachers leading the intervention and control classes.

For EYFS, Year 2 and Year 5 children's data was gathered on attitudes to learning and behaviour differences using a puppet-based task loosely based on the Berkeley Puppet Interview (Measelle et al., 1998).

EYFS participants met individually with the researcher, from the intervention and control groups, and were introduced to two puppets – Zig (learning differences) and Zag (behaviour differences). See Pre intervention Materials and Measures section 3.6 for design features. Children were asked to leave their immediate classroom environment and worked with the researcher in an area adjacent to the classroom. This ensured that the children were not too removed from an environment they were used to and reduced the timespan collecting the data to a minimum.

Using the EYFS story books, the researcher explained that Zig finds some learning-related things difficult (e.g. ordering numbers and reading) and that Zag finds some behaviour-related things difficult (e.g. pushing others and being noisy). Each character was introduced separately, and the children were then asked to select five words or pictures from a selection that best described how they felt about Zig and five for how they felt about Zag (See Measures for questions and emoji recording sheet) to answer the questions set by the researcher (See Measures, for questions posed to EYFS children). The feeling words (and visual description) were presented to the children and discussed to ensure understanding (See Measures for Emoji board).

EYFS children were first shown the book about Zig and encouraged to join in reading with me. They were then asked to point to the emojis which best described their feelings about the question posed. I then recorded each emoji the child pointed to by marking their

responses on an individual sheet for each child. I repeated this procedure with the Zag character. This procedure was undertaken with both the intervention and control groups.

A different, age-appropriate, approach was used for Year 2 and Year 5 children. This meant that children in Year 2 were able to work in small groups of up to 12 children, instead of 1:1. The children were collected from their class by the researcher and asked to sit in the Library space, which accommodated laptops and computers. The children were asked to sit on the carpet and were shown an A4 format book by the researcher describing Zig and Zag's week at school, with each page describing what happened each day e.g., On Monday ..., On Tuesday (See Chapter 3, Measures for Exemplar and Appendices 11 and 12 for the whole text). This format was more appropriate for the stages of reading development for Year 2 as the book provided more context and a more appropriate reading level, and different to EYFS who required simple words and sentences. Once again, pupils were asked to discuss and describe how they felt about Zig and Zag.

In the pre-intervention group discussion children were encouraged to think about the character differences and similarities. Once the book had been read and the characters discussed, the children were asked to find a laptop or computer to complete the Qualtrics questionnaire, which had been set up for the children to complete, prior to the children attending the library, making it fun and interactive. This aspect of data collection was completed in groups to speed up time process of data collection and to ensure the demands on the participating schools were not excessive.

During this pre-intervention data collection, children were asked to read the questions and then mark their response. The children were asked not to discuss their answers with one another, and I reiterated that there were no right or wrong answers to each question. If children became stuck and unable to read the question – they were asked to put up their hand and they were supported by me. After the children had completed the questions, they went

back to their classroom. Children completed this task at different speeds, but the questionnaire took approximately 15 minutes to complete, with some children completing faster than others.

The same process was completed for the Year 5 children, in control and intervention groups. The children in Year 5 were presented with an age-appropriate version of Zig and Zag's week in the form of a comic strip (See Measures for photograph). This again, appealed to the older audience, but effectively described the behaviours of the characters. Pupils were asked about their perspectives of the Zig and Zag characters and encouraged to have a discussion. They were also asked to find a laptop or computer, set up prior to them entering the library, and asked to complete the Qualtrics questionnaire independently. As in Year 2, when each participant had completed the questionnaire, they were thanked and asked to go back to their classroom. The Year 5 children were slightly faster at completing the questionnaire, which was in part due to their developing fine motor skills and developing ability to use a mouse and keyboard.

3.7.4. Intervention

Using the planning provided by the researcher, each intervention class conducted one P4C session per week, over the timetabled four weeks. The session entailed the children, EYFS, Year 2 and Year 5, sitting in a circle on the carpet (Year 5 making a circle of chairs).

Children in Years 2 and 5 were asked to choose a superhero name to ensure their anonymity, and initials were used for children in the EYFS groups and in the Years 2 and 5 control groups. Initials were used in both School 1 and School 2 EYFS intervention groups because both teachers felt it was too confusing for the children – to say their superhero name only during the P4C session. So, it was agreed that the children would use their name, and

this would be anonymised during the transcription of the P4C sessions to initials. The sessions started with a warm-up activity, which then led to the main stimulus and questions. The format of the session was at the discretion of the teacher, who facilitated the discussion and encouraged every child to take part (see Appendices 5-8 for exemplar lesson plans). Two digital audio-recorders were used during the P4C sessions (to pick up as much of the discussion as possible and ensure data backup) and interviews and recordings were transcribed fully, and anonymised, after the sessions. One audio-recorder was placed in the centre of the circle and one at the outer part of the circle to ensure that all discussion was captured.

3.7.5. Post testing

The procedure for School 1 and School 2 post testing was the same as pre testing. EYFS participants (in both the intervention and control classes) were introduced to Zig and Zag again and were asked the pre-test questions again within one week of the intervention. The same occurred for Year 2 and Year 5 who re-did the CATCH questionnaire.

Additionally, the children in EYFS, Year 2 and 5 were asked to respond to questions about a series of vignettes that were focused on their perspectives of screening for learning and behaviour differences (See Post Testing Measures, Section....). The Year 2 and Year 5 children responded in writing, as part of an online questionnaire, while I worked verbally 1:1 with the youngest children (EYFS), recording and transcribing their responses (see Measures).

3.7.6. Delayed Post testing

The same measures were administered, approximately three months after the intervention (12 weeks), to explore whether any effects from the P4C intervention had been maintained, but not the vignettes which were only completed at post testing for both schools.

Delayed post testing was completed by School 1 only. School 2 did not complete the delayed post testing questionnaire because of Covid 19 restrictions. This is further explained in the Process evaluation Chapter 5.

3.7.7. Experiences of the control group

In ensuring that ethically, the control groups, did not suffer disadvantage because of having P4C sessions focussing of labels and disability, intervention stimulus (books and clips) were left with the schools taking part. This was so that the control groups could take part in the P4C sessions after the study was completed if the schools chose to administer them (Burnett & Coldwell, 2020). School 1, however, chose to administer a very similar P4C about empathy before the intervention was completed and this may have impacted the post testing results (See Chapter 5, Process evaluation).

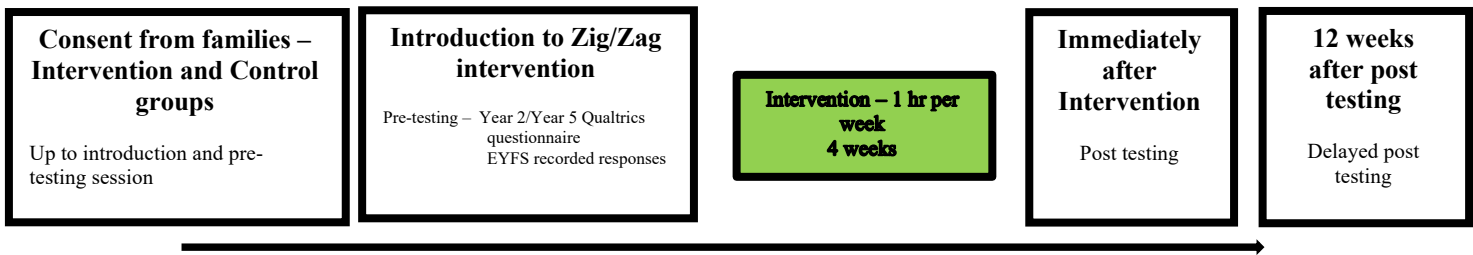
3.7.8. Completion of the Study

On completion of the intervention, post-testing and, in School 1, delayed post testing, both the control and intervention group children were offered a certificate for taking part in university research as a Research Assistant, featuring Zig and Zag. This was shared with parents and family after the intervention was completed during well done class and key stage assemblies. This certificate was also offered to the children who had undertaken the feasibility study (see Feasibility report at the end of Procedure section). See Appendix 14 for the children's certificate for taking part in the study.

3.7.9. Study Research Timeline

Figure 3.11 Assessment points and timings for outcome data collection and how they correspond to the timing of the intervention

Timeline for Assessment



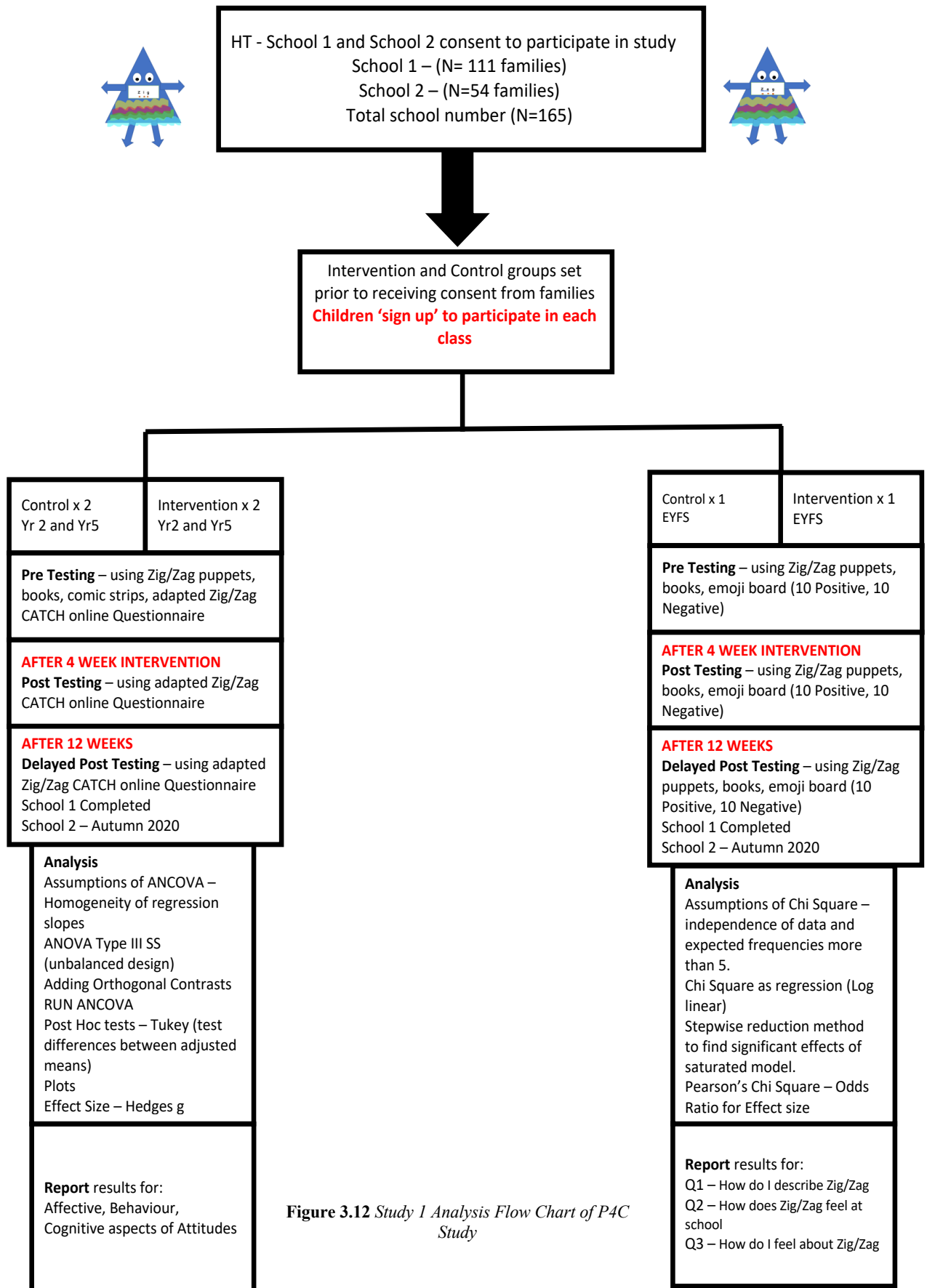


Figure 3.12 Study 1 Analysis Flow Chart of P4C Study

3.8. Methods of data analysis

3.8.1. Open Research and pre-registration

The study was also registered with the OSF so that the study would be open, have integrity and could be replicated (Foster & Deardorff, 2017). See Open Science Framework (OSF) <https://osf.io/n4dqp/> for pre-registration details. The benefits of pre-registering the study included stipulating the hypotheses and analysis plan ahead of the data collection to stop hindsight bias, when generating hypotheses, and confirmatory, when testing hypotheses, bias (Nunzo, 2015).

3.8.2. Changes to Analysis plan

The analysis plan within the original registration with the Open Science Framework (OSF) was updated to ensure that the sub-scales of Attitudes (Affective, Behaviour, Cognitive) were measured and treated separately. Analysis of three of the hypotheses were altered from one-way analysis to two-way to ensure that the sub-scales could be measured separately and compared. This was altered after data collection, but before analysis of the data.

3.8.3. Quantitative Analysis

The following indicates the four hypotheses and exploratory questions from the RCT (See Chapter 4) and explains the analysis used to test the efficacy of the intervention. The hypotheses were:

H1: There will be no difference between the two groups (intervention and control) prior to intervention.

H2: Children will be more positive about someone with learning difficulties than with behavioural difficulties in both groups.

H3: The intervention group will report significantly more positive attitudes to SEND than the control group post-intervention.

H4: If an effect of intervention is found immediately after intervention it will no longer be evident at delayed post-test (12 weeks).

Exploratory RQs

E1: Are any observed effects stronger in relation to children with one type of difficulty ie: learning/behaviour than another?

E2: How do the three-year groups differ from each other? A process evaluation will be conducted to understand fidelity to the intervention, allowable flexibility and potential mechanisms for effectiveness.

The qualitative analyses, beyond impact evaluation and implementation and process evaluations (See Chapter 5), will be explained in Chapters 6 and 7.

All statistical analysis were conducted in R 3.5.1

Descriptive statistics and frequencies were reported for all study variables. Individual hypotheses were tested as follows:

H1: There will be no difference between the two groups prior to intervention. A 2-way ANOVA was the most appropriate test to use to reduce Type 1 errors, rather than conducting 3 sets of t-tests to compare the three aspects of attitude (Affective, Behaviour, Cognitive).

H2: Children will be more positive about someone with learning difficulties than with behavioural difficulties. A Paired samples t-test was the most appropriate test to use because there were two experimental conditions, and the same participants took part in both conditions of the experiment. Using a paired samples t-test would enable me to test whether two group means were different, measuring a baseline compared to after intervention, for Zig

(learning differences) and Zag (behaviour differences) in Affective, Behaviour and Cognitive aspects of attitude.

H3: The intervention group will report significantly more positive attitudes to SEND than the control group post-intervention. A 2-way ANCOVA was used to compare whether the groups were significantly different after intervention, correcting for pre-test scores (Field et al., 2012).

H4: If an effect of intervention is found immediately after intervention it will no longer be evident at delayed post-test (12 weeks). Again a 2-way ANCOVA was used to correct for previous scores at post-testing.

EYFS items: For categorical variables, such as the Zig and Zag descriptions, Pearson Chi Squared tests were used to measure the frequencies of things that fall into each combination of categories. However, where there were three or more categorical variables to analyse loglinear analysis was used (Field et al., 2012).

3.8.4. Missing Data

To reduce the incidence of Missing at Random (MAR) data I worked with small groups of up to 12 children to ensure that participants answered all the questions, choosing one option (from Likert scale 1-5), before uploading to Qualtrics. Table 4.2. Chapter 4 indicates MAR data.

3.8.5. Compliance and Intention to Treat

A process evaluation, conducted using an Education Endowment Foundation (EEF) template, was completed to check for compliance and fidelity to the intervention. A failure to adhere to the intervention protocol could have an effect on the findings.

3.8.6. Qualitative Analysis

This study focussed on and reported children's views about learning and behaviour differences and their attitudes towards screening for potentially increased likelihood of learning or behaviour differences. Using content and thematic analysis, the aim was to take an approach which 'accurately captures 'reality' (Braun & Clarke, 2013, p. 280) of children's voices. However, I acknowledge that what was captured might be a transient reality – what children thought at that passing moment, and that coding and analysis are likely to have been influenced by my own biases as the questions set were in a context that children understood and meaningful (close to real life scenarios) it was hoped that attaining 'real-world' ecological validity could be achieved (Braun & Clarke, 2013).

Children from School 1 and School 2, Intervention and Control groups, all completed questionnaire data for the content analysis (see Chapter 6). However, only the Intervention groups from School 1 and School 2 took part in the P4C intervention. School 1 and School 2 combined EYFS (n=27), Year 2 (n=30) and Year 5 (n=27), which made a total of (n=84) data was used for the thematic analysis (see Chapter 7).

3.8.7. Content Analysis

An inductive, exploratory content analysis of the research question: Do children think it is important to predict learning and behaviour problems, and do they think genetic screening has a role to play in this? (Chapter 6) was undertaken (Bengtsson, 2016). Initially the data was 'open coded' by labelling each meaning unit with one or more codes before combining codes into categories. Coding was manifest rather than latent, focusing on what participants said rather than trying to identify hidden meanings. A codebook of 38 codes was developed and used to train a second researcher who independently coded 20% of the data in

order to assess the reliability of the coding. Children ($n = 128$) reported a response to each of the four questions ($n = 640$ responses) and every fifth response ($n = 128$) was coded by the second researcher (an intern in the GOALS lab at the University of York). We tested for intercoder reliability using Cohen's Kappa and the results of this analysis are shown in Table 6.1 Chapter 6.

3.8.8. Thematic Analysis

Inductive analysis was undertaken of the final P4C session which asked the question: What can a Philosophy for Children (P4C) discussion teach us about children's understanding of the origins and implications of being different?

Inductive analysis of the data from the P4C sessions aimed to demonstrate where there were changes in attitudes, how children challenged each other's perspectives, gave an insight to the words used, and how effectively they were able to make their point e.g. linking to others comments or building upon ideas from others. The outcome of Study 1's qualitative data analysis enhanced the understanding/description of what children think and say about SEND and labels (over and above the philosophy element). These analyses were all exploratory i.e. not hypothesis-testing and are explained fully in Chapter 7.

Inductive reflexive thematic analysis (Braun and Clarke, 2013) was used to analyse the transcript of the children's discussion during the final P4C session and gained a 'freer' in depth understanding of what the children said and thought regarding their understanding of the origins and implications of being different (See Chapter 7). The use of reflexive thematic analysis enabled analysis of the small changes in attitude when a child begins to question others' views and ideas or to build on others' viewpoints to make their point, within the philosophical pedagogy. Reflexive TA was especially well suited to achieving this as I

was able to stay close to the children’s viewpoints. Six P4C sessions were transcribed (all Session 4 sessions of the intervention), two sessions from EYFS, Year 2 and Year 5. A GenOmics And Life Stories (GOALS) lab team member deleted responses from participants who had not consented to take part in the study. Another team member approached me to ask if they could support me by initially open coding the data, by looking for patterns across the dataset. I also open coded the dataset and we were then able to reflexively discuss our observations of the data and ‘our role in producing that knowledge’ (Braun & Clarke, 2021, p. 37) Initial codes were generated and recorded in a shared document. The transcripts were re-reviewed, and codes finalised by me and my supervisor, before being analysed and organised into themes. The analysis was semantic and essentialist, describing the children’s experiences. Where expressions such as ‘some’ or ‘several’ are reported, these are not intended to quantify the data, but merely to illustrate the children’s consensus around particular viewpoints across the dataset.

I used the following checklist to ensure that the thematic analysis was robust:

Table 3.3 Adopted 15-point checklist of criteria for good thematic analysis (Braun & Clarke, 2006, Braun & Clarke, 2014, p. 287)

Process	No.	Criteria	Current study
Transcription	1	The data have been transcribed to an appropriate level of detail, and the transcripts have been checked against the tapes for ‘accuracy’	DF – transcription of 12 transcripts @ approx. 1 hr in length DF – revisited transcripts to check for accuracy
Coding	2	Each data item has been given equal attention in the coding process	DF/GOALS lab members
	3	Themes have not been generated from a few vivid examples (an anecdotal approach), but instead the coding process has been thorough, inclusive and comprehensive	All codes reviewed

	4	All relevant extracts for all each theme have been collated	DF – all extracts have been collated
	5	Themes have been checked against each other and back to the original data set	DF/GOALS lab member
	6	Themes are internally coherent, consistent, and distinctive	DF/ GOALS lab member
Analysis	7	Data have been analysed – interpreted, made sense of – rather than just paraphrased or described	DF/GOALS lab member/supervisor
	8	Analysis and data match each other – the extracts illustrate the analytical claims	DF/Supervisor
	9	Analysis tells a convincing and well-organised story about the data and topic	DF
	10	A good balance between analytic narrative and illustrative extracts is provided	DF
Overall	11	Enough time has been allocated to complete all phases of the analysis	yes
Written report	12	The assumptions about, and specific approach to, thematic analysis are clearly explicated	yes
	13	There is a good fit between what you claim you do, and what you show you have done – i.e. described method and reported analysis are consistent	Superficial at first – then deeper analysis
	14	The language and concepts used in the report are consistent with the epistemological position of the analysis	Ontology = critical realism (the truth is out there) Epistemology = relativism (it's impossible to access the truth directly) Position = 'a concept of truth and reality but recognise that human practices always shape how we experience and know this – human practices can be said to give rise to perspectival and contextual truths' (Braun and Clarke, 2022, p. 169)
	15	The researcher is positioned as active in the research process; themes do not just 'emerge'	Data has been derived, identified and features

3.9. Ethics

3.9.1. Ethical Considerations

Chervin and Kyle (1993) suggest that using collaborative inquiry with school pupils as a research method is ethically, academically, and politically plausible, even though children have sometimes been viewed as deficient “in their reasoning capacity and competence” (p. 29). Chervin and Kyle (1993) argued that, in many collaborative studies, children continued to be ‘worked on’, rather than ‘with’ as “research partners” (p. 30).

However, to mitigate ‘working on’ children and to ensure the study was ethical I ensured that a number of principles were adhered to through the University of York Code of Practice and principles for good ethical governance (University of York, 2022).

Prior to visiting both schools in the study, I completed an enhanced Disclosure and Barring Service check and provided the documents to both schools for their records. Parents were also informed that the researcher was DBS checked and was following the school’s child protection and safeguarding policy. It was made clear to parents and children from the outset that at no point could anonymity and confidentiality be guaranteed if the researcher had any concerns about safeguarding and wellbeing concerns for the children, and any concerns would be raised with the designated safeguarding officer.

Teachers from the randomised control and intervention classes were asked to also consent to participate within the study. Although they were facilitators, rather than participants, ethically I thought it right to ensure that teachers consented to take part as this was beyond their normal teaching remit.

As an inducement for the schools to take part in the study, they were offered the anonymised and transcribed P4C sessions so that the schools could use the information to

gain the SAPERE Gold award for Philosophy for Children. Ethically, I believed that my study should not be just about taking data from the school but the idea of reciprocal support, i.e. the of sharing of anonymised transcripts so that the school could develop their P4C practice. I believe that the transcripts were used in their journey towards a Gold Award, as evidence of P4C enquiry.

Gaining consent from children to take part in research, within educational settings, was not without its challenges, mainly because consent from parents and assent from children is dependent on school and head teacher ‘gatekeepers’ allowing this to happen (Morrow & Richards, 1996; Heath et al., 2007).

BERA (2018) ethics guidance suggests that support for children, when asking them to assent to research participation, is needed. Gaining assent from children needs ‘time and constant effort’ (Cocks, 2006, p. 257) on behalf of the researcher. Young children are able to make informed decisions, if they understand the context and it is meaningful to them (Coyne, 2010).

As the focus of the research was about children’s voice gaining their assent was an important factor within the study. Gaining assent from the children was the priority within this research and the methods used to gain this were carefully considered in the following ways:

The invitation letter sent to parents, via the school, asked the parents or carers to discuss with their child what the research was about and what it would mean for them if they took part (see Appendix 4 for school and parent invitation letters).

Parents were asked to opt into the research rather than opt out, after talking with their child about what taking part in the study would mean for them.

Parents and children, through the invitation letter, were made aware that they could withdraw at any time, without reason, and there would be no penalty i.e. that children would

not be in trouble for saying they didn't want to continue. This meant that from the start of the intervention children were asked if they were happy to continue at each stage (pre, intervention, post, post delayed testing). This also meant observing children's non-verbal behaviour for signs that they didn't want to continue. As a previous teacher of EYFS and the primary age group, I had a very good understanding of children's behaviour within a school context. Whilst undertaking the research, I was aware that children's assent may change at any given moment and was particularly aware of the three main types of dissent 'normative, unnoticeable and playful' (Kirby, 2020), which could be displayed through non-verbal body language, and to act ethically by ensuring that the children were able to continue to make an informed choice about participation (Whittington, 2019).

A pictorial assent form (See Chapter 3, Measures) was used at every point during the data collection, at pre-, post- and delayed post-intervention testing, allowing the children to stop or opt out from the research. In addition to this, if children showed distress e.g., by becoming visibly upset, uninterested or wanting to do something else – then they were withdrawn from the study. On two occasions this happened. Firstly, in School 1 where a participant in EYFS began the study, but lost interest after looking at the characters and the second participant, in School 2, in Year 2, looked visibly upset when asked to complete the questionnaire using the ipads. On both occasions I ensured that children were okay and then made sure they were supported by in the classroom environment (after explaining to their teacher it was okay to stop).

Prior to the P4C intervention sessions, children were made aware each time that the session would be audio recorded. Those children whose parents had not consented for them to take part in the study, or who had not assented, were also assured that their data would not be used, through the anonymization process.

All children in the intervention groups from the outset chose superhero names or used initials which gave them anonymity from the outset. Lanyards, used during the P4C sessions with children's superhero names on, were kept by the children after the study and they were also presented with a certificate of appreciation for taking part.

3.9.2. Gaining Children's Assent

A philosophical approach to understanding young children's understanding of the aetiology of individual differences and the implications of being different was adopted to enable children to enhance their thinking and communication skills and "to listen carefully to each other, to explore differences of opinion respectfully, and to value the ideas of others" (SAPERRE, n.d., para. 6). This approach was particularly important when discussing the sensitive topic of disability and where differences originate, particularly when thinking about the challenges of other data collecting methods such as adult-child power imbalances posed when interviewing children (Urbina-Garcia, 2019) and the complexity of designing and implementing self-report measures (Coombes et al., 2021). The aim of using this methodology was to empower children by giving them an appropriate opportunity to express their viewpoints and take them seriously (Urbina-Garcia, 2019). Working with children (Dockett & Perry, 2011), listening to, and acting upon their perspectives is the central concept to this paper (Convention on the Rights of the Child, 1989).

As the researcher I was also mindful of my positionality within the study and that of undertaking the study within primary schools. For further discussion see Reflexivity Statement after Ethics (See Section 3.9.3).

Pre, post- and delayed post-intervention testing activity was kept to a maximum of 15/20 minutes, which supported concentration skills and was age appropriate. EYFS children were asked to either point or say their ideas (which were recorded and transcribed).

The ethics application was approved by the Education Department at the University of York (Appendix 16).

Information during the study was kept strictly confidential and was – and will only - be shared with my supervisor, and members of the GOALS lab (for inter-rater reliability checking).

Children’s data and P4C session transcripts were stored by code number, and any identifiable information has been stored separately from the data. It was kept until after the 3 month post-intervention test and then destroyed.

Digital recording and transcripts of the interviews have been securely stored in password-protected files.

Anonymised data will be retained after completion of the project for further analysis if necessary (e.g. during the publication and peer review process). It may also be desirable to analyse the session transcripts for sessions 1-3. The schools and participants will not be identified in any publications or conference papers related to the research.

The data will be kept indefinitely in a secure repository. The results of the evaluation may be shared for research or training purposes, but children will not be identified individually. If parents did not want their child’s interview/data to be included in any information shared as a result of this research, they were asked to not sign the consent form. The children were also free to withdraw from the evaluation at any time, without consequence. The schools and parents could also withdraw the children from the study at any time without reason.

3.9.3. Reflexivity Statement

Being reflexive in qualitative research is extremely important (Braun & Clarke, 2021). As a researcher in this study, it was important for me to reflect how my role, of previously being a teacher, could affect the practice and the processes.

It is likely that I had some preconceived ideas about whether and why children may hold certain views about peers with learning and behaviour differences or about genetic screening. This is because as the researcher, I have a good understanding of behavioural genetics, undertaking modules at MSc level and reading during my PhD, but also because I am an experienced primary school teacher (EYFS specialist) and have been a SENDCo, undertaking the SENDCo coordination qualification. Whilst reflecting on undertaking my MSc dissertation about children's perceptions of their Individual Educational Plan (IEP), the data from that small scale study made me realise just how little SEND children are able to give their own perspectives about their education and learning, which I felt could be due to parental gatekeeping (Kirby, 2020) or school/teacher expectations (Kirby, 2020). Reflecting on this in the current study, I wondered what children thought of other children with SEND (differences) and felt it was important to ensure that I reported the children's perspectives in a compelling and insightful manner, to try to attain ecological validity (Braun & Clarke, 2013).

To redress the imbalance of authority between the researcher and children, and to give children the confidence to provide their views (Lundy & McEvoy, 2017), four mitigations were put in place: firstly, taking on the character of 'least adult' (Mandall, 1991). Over several visits to both schools, I became 'a familiar figure' to whom children appeared to feel comfortable and safe expressing their views (Mayall, 2008). Children knew when I arrived at school that I was 'the lady with Zig and Zag'. Secondly, the use of vignettes, depersonalised

this sensitive topic (Schoenberg and Ravdal, 2000) and thirdly by using puppets and providing children with developmentally appropriate methods of data collection I aimed to conduct research ‘with’ rather than ‘on’ children. However, it is important to acknowledge that the research was designed and administered by adults rather than being genuinely co-constructed with children (Facca et al., 2020). The P4C sessions, and the use of puppets and story books, encouraged children to discuss situations which were ‘meaningful to ‘real life’ (Braun & Clarke, 2013) ecological validity was attained because data gathering was “less removed from the real world than quantitative measures” (Braun & Clarke, 2013, p. 280).

The qualitative data was viewed through a genetic lens, and I acknowledge that the meaning drawn in this thesis might not be the meaning intended by the participants, or someone else who interpreted the data from a different position. That said, my conscious intention was to stay as close to the data as possible – the child’s voice.

By using the terminology of ‘differences’ throughout the thesis rather than terminology such as ‘Special Educational Needs’, ‘disabled’ and ‘disability’ it was hoped to encourage social acceptance (Algraigray & Boyle, 2017) and a reduction in ableist and medicalised language (Bottema-Beutel et al., 2021). See Chapter 2 for in depth discussion about use of terminology.

3.10. Pilot - Feasibility Report

3.10.1. Feasibility study

Participants in the feasibility study were presented with the materials to be used within the study. Presented to them were:

The characters Zig and Zag

EYFS books for Zig and Zag

Year 2 books for Zig and Zag

Year 5 comic strips for Zig and Zag

The CATCH questionnaire (printed version) – Year 2 and Year 5

EYFS emoji board and questions sheets for Zig and Zag

As a group – the participants were introduced to Zig and Zag (see section X.X.X for materials/resources). Each participant was asked what they noticed about the characters Zig and Zag. All participants described the puppets as being the ‘exactly the same’ except for the middle letters of their name tags. Participants wanted to hold the characters indicating that they were both visual and tactile, appealing to participants. Each participant in the feasibility study was given a comic strip entitled either ‘Zig/Zag’s week at school’, aimed at year 5 children, ‘Zig/Zag’s week at schoolbook, aimed at year 2 pupils or ‘Zig/Zag’s Day at schoolbook, aimed at EYFS pupils. Differentiated, each of the resources aimed to show each character’s differences. Zig’s story identified learning difficulties and Zag’s story identified behavioural difficulties.

The four participants also chose superhero names. The two nine year old participants became Owlet and Dolphin Tail, the eight year old participant became Danger Girl and the six year old participant became Cat Girl.

All the superheroes were asked to read the three sets of differentiated resources (EYFS and Year 2 books and Year 5 comic strips). They were also asked to give their views of the positive and negative emoji faces that would be used by EYFS pupils to describe Zig and Zag. They were then asked the following questions about the resources:

1. What do you think Zig/Zag comic books and comic strips are telling you?
2. Do the emoji faces and describing word underneath match?
3. Zig/Zag CATCH questionnaire – are the questions clear?

Do you understand what is being asked?

What do you think about question 22 particularly? “I try not to look at Zig/Zag when Zig/Zag is being very “Ziggy/Zaggy”. This was reviewed as both the researcher and supervisor felt the wording may be ‘clunky’ and the children would not understand the meaning.

Would you reword it?

4. Could you answer the questions EYFS participants sheet?

3.10.2. Participants’ views of the study measures

What do you think Zig/Zag comic books and comic strips are telling you?

Owlet described the Zag character (behavioural difficulties) as “not naughty but annoys other shapes” and the Zig character (learning difficulties) as “does not understand what the shape teacher is saying”. Dolphin Tail described the Zag character as “naughty and didn’t listen” and the Zig character as “didn’t understand much”. Dolphin Tail explained that both the EYFS and Year 2 books and comic strip all depicted the same story – noting that they had different formats. This suggested that all year groups may have a common understanding of Zig and Zag’s profiles, in spite of the differentiated stimuli. Danger Girl noted that character Zag was “naughty and distracting” and suggested that the Zig character “couldn’t hear properly”. Cat Girl noted that the resources showed that the character Zag was “naughty and a little bit bored and lazy” and the character Zig was “excited, silly and a bit happy”. Cat Girl particularly noted the differentiated materials indicating that the comic strip writing was too small. However, Cat Girl was quite able to read the EYFS and Year 2 books with some support for specific words such as ‘argument’ and ‘charcoal’. This suggests that differentiating the resources for different age groups was a good idea. Changes were therefore not made to the stimuli, and they were taken forward to the main study.

1. Do the emoji faces and describing word underneath match?

All participants were able to use the emoji emotions board when using two words to answer: How do I describe Zag? How does Zag feel (at school/most of the time?), How do I

feel about Zag?, Is Zag like me? Would I want to be Zag's friend? Can you say why? Why did you choose those words? All participants agreed that the emotions and describing words were accurately matched.

Owlet recognised the emoji board as having one side with positive words and the other side as negative words. Dolphin Tail suggested another word for the negative side for Zig and Zag character description as 'ridiculous'. Danger Girl suggested another negative word which could be added to the emotions board – 'distracting'. Although both of the participants had made valid suggestions for the emoji board changes were not made to the ten positive and ten negative emojis and wording as they had been carefully constructed to ensure that the descriptions were not perceived as judgemental.

2. Zig/Zag CATCH questionnaire – are the questions clear?

Do you understand what is being asked?

What do you think about question 22 particularly?

Would you reword it?

All participants read the CATCH questionnaire items, numbered 1-36, and presented as a paper copy for ease of access (it was presented via ipad in the main study). All participants agreed that the questions were easy to understand and that they would be able to give a response of either strongly disagree, disagree, can't decide, agree, or strongly agree to each item. When asked about question 22 from both the Zig/Zag CATCH measures "I try not to look at Zig/Zag when Zig/Zag is being very "Ziggy/Zaggy", the participants felt that they understood what the meaning of the question was but suggested adding 'would' to the questions to read "I would try not to look at Zig/Zag when Zig/Zag is being very "Ziggy/Zaggy". Two further queries about question 7 and 8 were raised by Owlet who asked what does "stick up for" mean? This was discussed with the correct meaning being understood. I decided to keep the question the same as three out of the four participants

understood the meaning. Question 8 had a grammatical error with want requiring an ‘s’ adding, this was pointed out by the participants. This was subsequently updated in Qualtrics.

3.10.3. Conclusions

The feasibility study showed that the resources and measures that had been developed for the study showed promise of being successful with the intended population of EYFS, Year 2 and Year 5 pupils. This is because the data collection process and resources are aligned developmentally with the ages/stages of the proposed participants (EYFS, Yr2 and Yr5) and the responses to the Zig/Zag books and comic strips indicated that the participants understood the difficulties each character had, without the books/comic strip explicitly labelling them. The participants also noted that the characters did not have a gender and referred to each as ‘it’. Owlet explained “it’s really good!” to use it instead of he/she. Participants also suggested a further background story for the puppet characters as coming from Zig and Zag land and not world. This change was made when introducing the characters to the children from School 1 and School 2. Overall, it was deemed feasible to proceed with the materials and measures that had been developed for the study.

Chapter 4

4. Quantitative Results - P4C Intervention - Effectiveness Trial

4.1. Introduction

This chapter details the findings from an RCT of the P4C intervention described in Chapter 3. Finding evidence of intervention effects on non-cognitive outcomes such as attitudes towards SEND is difficult and, in schools, is often overlooked in favour of attainment effects (Siddiqui et al., 2017). However, a small body of extant research indicates that non-cognitive skills can be developed, albeit to a small extent, using P4C interventions (Dasi et al., 2013; Topping & Trickey, 2014; Jenkins & Lyle, 2010; Yusoff, 2018).

4.2. Methods

The majority of the methods used for the RCT were described in Chapter 3. The current study was designed to ask whether a four-week P4C intervention would have significant effects on children's understanding and tolerance of learning and behaviour differences among their peers. Central to this study was the importance of ensuring that children's voices were heard and their attitudes and beliefs about SEND (and the potential use of genetic information to identify learning and behaviour differences) were listened to. The study addressed the following hypotheses:

- Hypothesis 1: There will be no difference between the two groups prior to intervention.
- Hypothesis 2: The intervention group will report significantly more positive attitudes to SEND than the control group post-intervention.
- Hypothesis 3: Children will be more positive about someone with learning difficulties than with behavioural difficulties in both groups.
- Hypothesis 4: If an effect of intervention is found immediately after intervention it will no longer be evident at delayed post-test (12 weeks).

The study also posed, at post-testing, four exploratory questions regarding children's beliefs about genetics, using vignettes, relating to Zig, Zag and their hypothetical offspring, Zog and Zeggy. These four questions aimed to assess children's understanding and views about intergenerational transmission of learning and behaviour difficulties. Each Yes, No, Not Sure response was followed by open ended prompt designed to elicit a deeper understanding of the choices made:

- Exploratory Question 1: When Zig or Zag grows up it falls in love with another shape called Zog. They have a beautiful baby shape called Zeggy. They worry that baby Zeggy might find learning or behaving properly tricky like Zig or Zag. Do you think they should be worried about this?
- Exploratory Question 2: They hear that you can find out whether there is a good chance of baby Zeggy finding learning or behaviour tricky by going to the doctor for a test that doesn't hurt a bit. Do you think they should do this?
- Exploratory Question 3: If you were Zig or Zag or Zog would you want baby Zeggy to have this test?
- Exploratory Question 4: What do you find tricky at school? If you'd had a test when you were a baby that showed you would find this tricky do you think you, your family or your school might have been able to do anything about it?

The quantitative data derived from the yes, no, not sure question is presented later in this chapter, after the main findings of the RCT. The open-ended question data were analysed using Content analysis (Bengtsson, 2016), see Chapter 6.

4.3. Missing Data

Table 4.1 indicates where cases were Missing Completely at Random (MCAR). Originally recruited to the study were ($n=172$) participants. However, three children were

absent at pre-testing, 3 children self-withdrew (1 non-verbal child unable to maintain attention, 1 child with ASD not interested refused to continue, 1 child with developmental delay upset about task) and 1 withdrew through ill health (non-attendance at school). The seven children equated to 4.1% of the data. As this percentage was less than the 5% of missing data which is classed as “unusual for missing data to influence conclusions if fewer than 5% of cases (or clusters in a cluster trial) are missing” (Torgerson & Torgerson, 2013, p. 21) it was felt that “analysing only those with observed data gives sensible results” (Torgerson & Torgerson, 2013, p. 20).

Table 4.1 Missing Completely at Random (MCAR) indicating participants who were absent from some parts of the testing – and were therefore not included in the results

Year Group (2 classes per group)	School 1 Intervention (I) Control (C)	School 2 Intervention (I) Control (C)	Combined S1 & S2 Intervention (I) Control (C) Not part of Study	Combined S1 & S2 Intervention (I) Control (C) Consent
EYFS/Foundation 2/Reception	N=19 I N=23 C	N= 8 I N=13 C	S1 C = 1 Absent pre-test 1 self-withdrew S2 I = 1 self-withdrew	N= 27 I N=36 C
Year 2	N=20 I N=20 C	N=10 I N=5 C	S2 I = 1 absent pre-test 1 withdrew ill health S2 C = 1 absent pre-test 1 self-withdrew	N=30 I N=25 C
Year 5	N=18 I N=11 C	N=9 I N=9 C		N=27 I N=20 C
		Total	S1 I = 1 S1 C = 2 S2 I = 2 S2 C = 2 Total = 7 children = 4.1% missing data	N=84 I N=81 C Originally recruited = 172 Total after missing data = 165 children

4.4. Results

Table 4.2 presents descriptive statistics for all of the main study measures for the older participants (Year 2 and 5). EYFS participants are not included here because of differences in how data was collected from them (described in Chapter 3, Methods). The

table shows median pre- and post-intervention scores for participants' affective, behavioural and cognitive attitudes towards Zig (the puppet with learning difficulties) and Zag (the puppet with behavioural difficulties) and how this altered over time.

Table 4.2 Descriptive statistics for main study measures (Standard deviation in brackets) - Year 2/Year 5

Attitude	Treatment	Zig Zag	N	Median Pre score	Median Post score
Affective	Control	Zag	45	11.3 (5.02)	10.8 (4.72)
Affective	Intervention	Zag	57	9 (5.30)	9.7 (4.83)
Affective	Control.	Zig	45	11.8 (3.69)	11.8 (4.11)
Affective	Intervention	Zig	57	12.3 (4.27)	12.9 (3.93)
Behaviour	Control	Zag	45	10 (4.21)	9.5 (4.22)
Behaviour	Intervention	Zag	57	10.2 (4.49)	10.8 (3.80)
Behaviour	Control	Zig	45	11.4 (4.58)	12.1 (4.57)
Behaviour	Intervention	Zig	57	13 (5.49)	13 (4.93)
Cognitive	Control	Zag	45	25 (5.37)	24 (5.23)
Cognitive	Intervention	Zag	57	24 (5.81)	24 (5.16)
Cognitive	Control	Zig	45	25 (5.61)	24 (5.37)
Cognitive	Intervention	Zig	57	25 (5.10)	26 (5.11)

NB. Zig is the puppet with learning difficulties and Zag is the puppet with behavioural difficulties.

The largest observed differences in average pre-intervention scores for the experimental and control groups relate to affective attitudes towards Zag (behavioural difficulties; 11.3 compared to 9.0) and behavioural attitudes/intentions towards Zig (learning difficulties; 11.4 compared to 13.0). However, paired samples t-tests indicated that these differences were not significant (see Figures 4.1, 4.2, 4.3) – as expected given that participants were randomly allocated to groups. Table 4.2 also indicates that attitudes were generally more positive towards Zig (learning difficulties) than they were towards Zag (behavioural difficulties), particularly for affective attitudes and behavioural intentions.

Descriptive statistics for the post-intervention data suggest that the control group's median scores either stayed the same or decreased after the intervention, with the exception

of behavioural attitudes towards Zig (learning difficulties) which increased from 11.4 to 12.1. Attitudes in the intervention groups appear to have stayed the same or increased, with affective attitudes towards Zig (learning difficulties) increasing from 12.3 to 12.9. These initial observations, based on descriptive statistics, were tested in relation to the four hypotheses listed above.

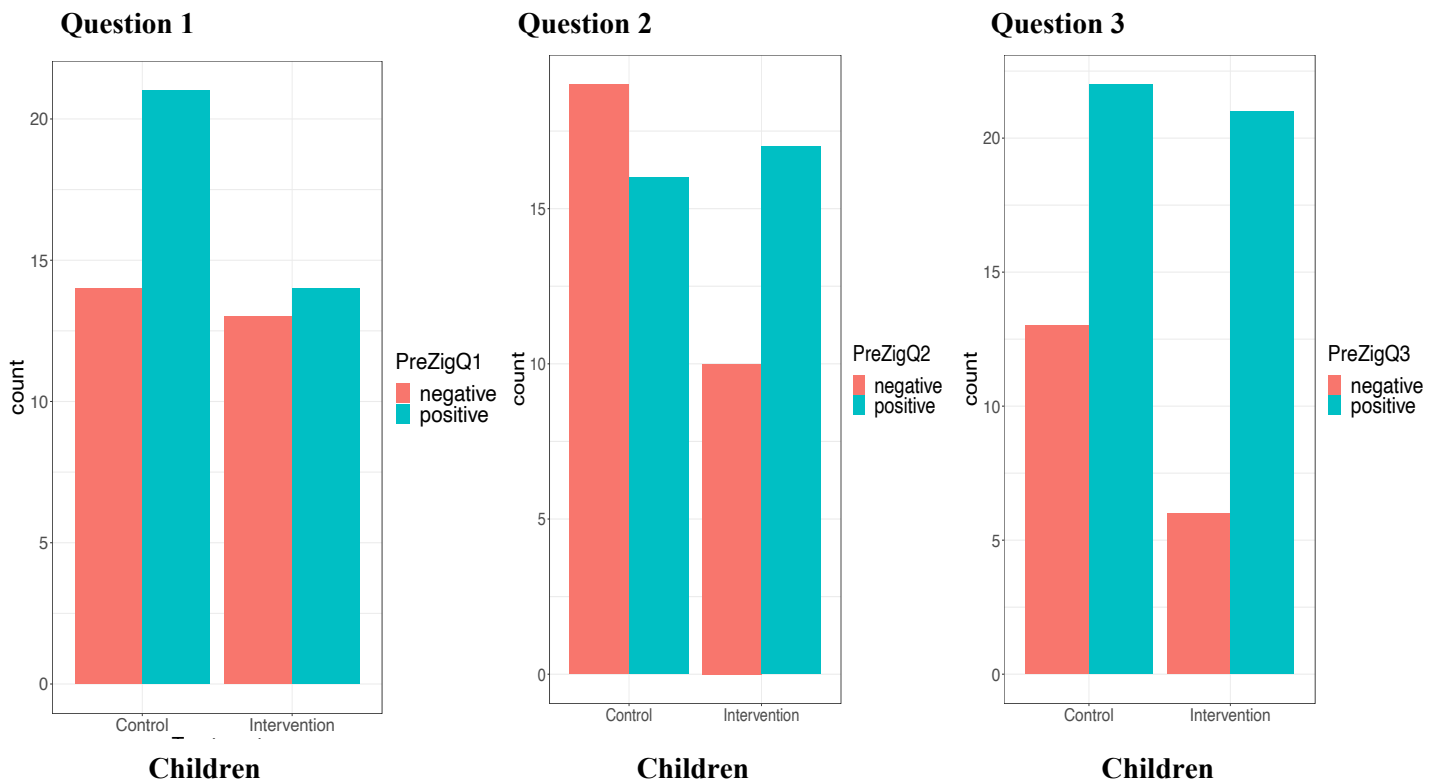
4.4.1. Hypothesis 1: There will be no difference between intervention and control groups prior to intervention

As noted previously, paired samples t-tests showed that there were no significant differences between experimental and control groups in Year 2 and Year 5. Chi-square tests were used to test whether experimental and control groups of EYFS participants, for Zig and Zag, were equivalent prior to intervention.

EYFS outcomes: equivalence of groups at pre-intervention:

Pre-intervention Zig

Figure 4.1 EYFS Pre intervention Zig: Question 1. How do you describe Zig?, 2. How does Zig feel at school?, 3. How do I feel about Zig?



EYFS participants were asked three questions about Zig, as noted in Figure 4.1.

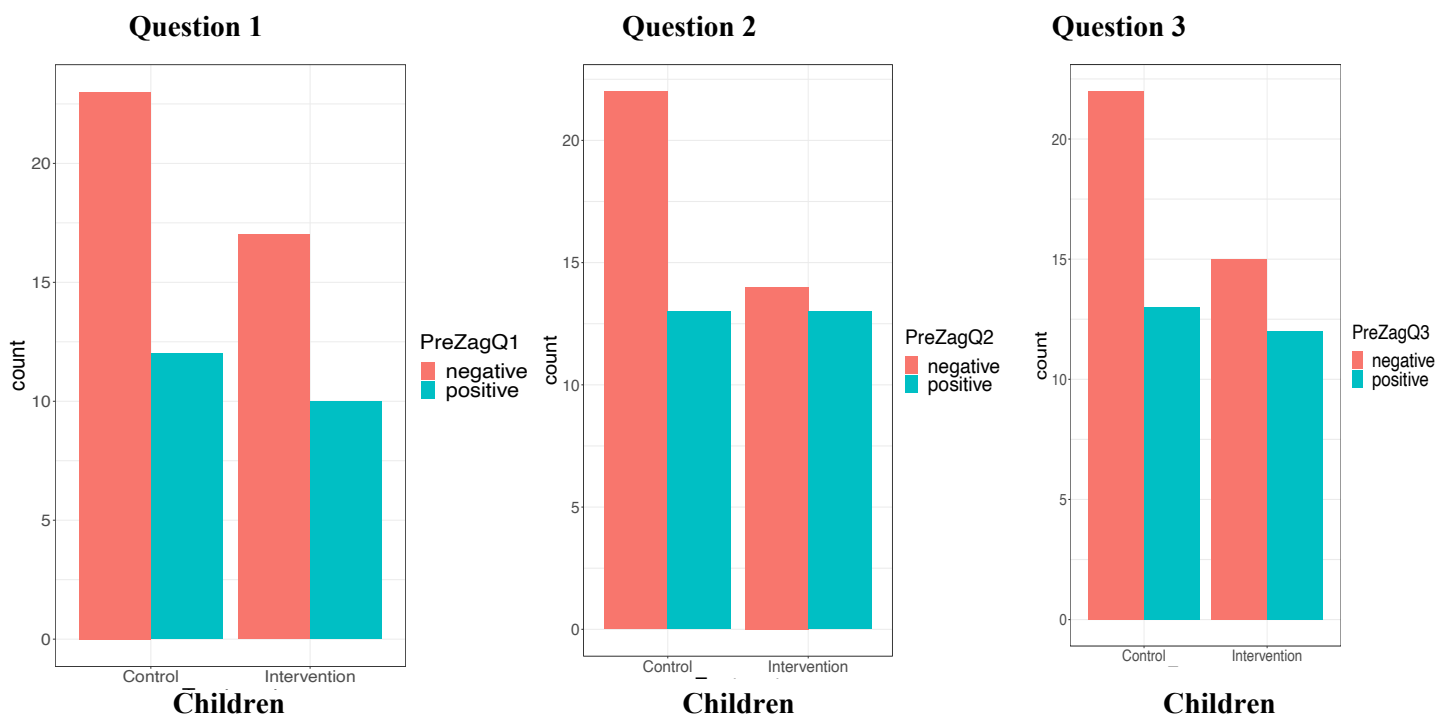
Children were asked to respond to the three questions by choosing the five emojis that best fit their views about the questions. Children were able to choose from 10 positive and 10 negative facial expression emojis. An individual's score, therefore, might look like for example 3 positive and 2 negative emojis = +1, with a range of +5 to -5. A Chi-square test showed that pre-intervention difference between the control and intervention groups for Question 1 (How do you describe Zig?) were not statistically significant $X^2(1) = .412$, $p = .521$. This was the same for Question 2 (How does Zig feel at school?) $X^2(1) = 1.821475$,

$p = .177$ and also for Question 3 (How do I feel about Zig?) $\chi^2 (1) = 1.60, p = .206$. Figure 4.1

Shows the intervention (red bar) and control group (green bar) responses for Zig (learning differences). This supports the effectiveness of our randomisation process.

EYFS outcomes: equivalence of groups at pre-intervention: Pre intervention Zag (behaviour differences)

Figure 4.2 EYFS Pre intervention Zag: Question 1. How do you describe Zag?, 2. How does Zag feel at school?, 3. How do I feel about Zag?



The assumptions and threshold frequencies for Chi Square were also met for EYFS participants' attitudes towards Zag (behavioural difficulties). Once again, there was no significant pre-intervention differences between groups for Question 1 (how do you describe Zag?) $\chi^2(1) = .050, p = .822$; Question 2 (How does Zag feel at school?) $\chi^2 (1) = .758, p = .383$; or Question 3 (How do I feel about Zag?) $\chi^2 (1) = .338, p = .561$. Figure 4.2 indicates

the intervention (red bar) and control group (green bar) responses for Zag (behaviour differences).

Year 2/Year 5 outcomes: equivalence of groups at pre-intervention:

For Year 2 and Year 5 data, each aspect of Attitude (Affective (feelings), Behaviour (behaviour towards) and Cognitive (thoughts towards) was measured prior to intervention to ensure that there were no statistical differences between intervention and control groups' scores.

Figure 4.3 a) Pre Affective (feelings towards), b) Pre Behaviour (actions towards), c) Pre Cognitive (thoughts towards) for Year 2/Year 5

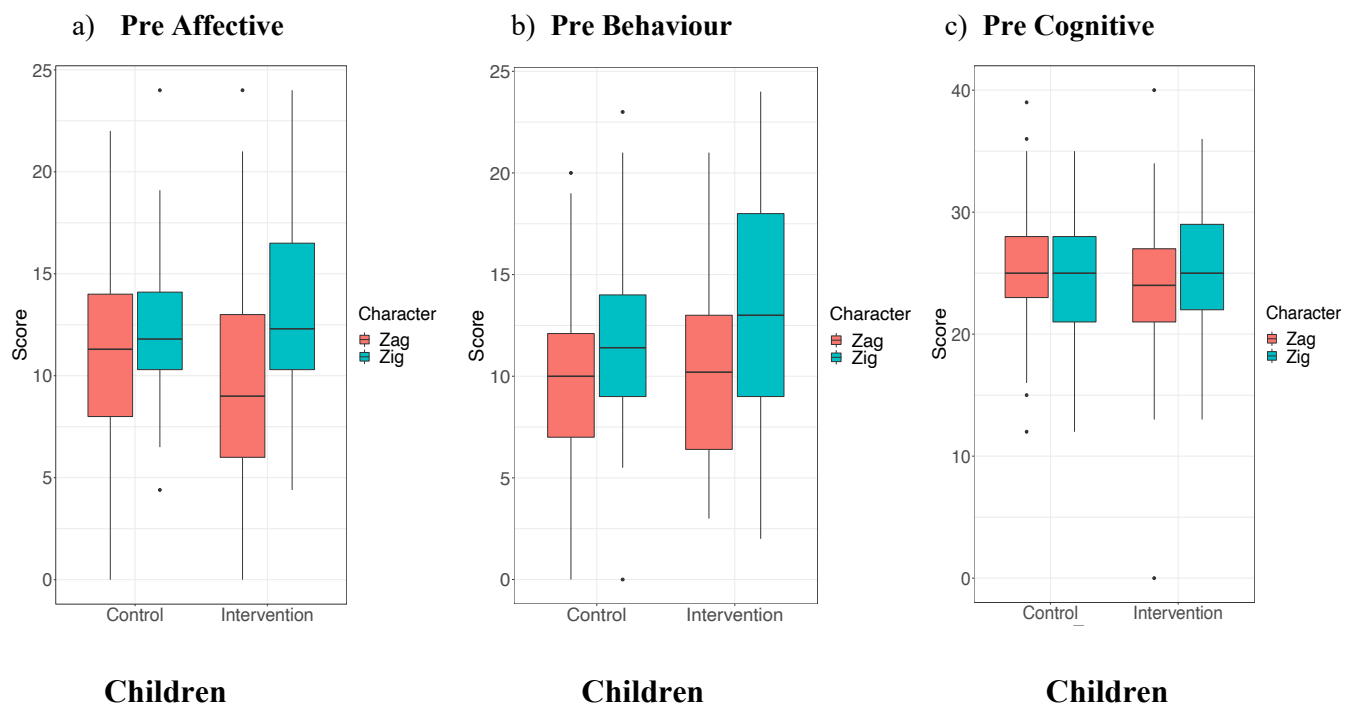


Figure 4.3 shows that pre-intervention Affective Attitudes (feelings) were not significantly different for the Year 2/5 intervention and control groups, $F(1, 200) = 20.709, p = .760$. Shapiro-Wilk test indicated approximately normally distributed data indicating the null hypothesis, at the 95% level of significance $p = .076$.

Pre-intervention scores for Attitudes about Behaviour (behaviour towards) indicated the population variances for the control and intervention groups were not significantly different, $F(1, 200)=16.18$ $p=.256$. Shapiro-Wilk test indicated approximately normally distributed data indicating the null hypothesis, at the 95% level of significance $p=.286$.

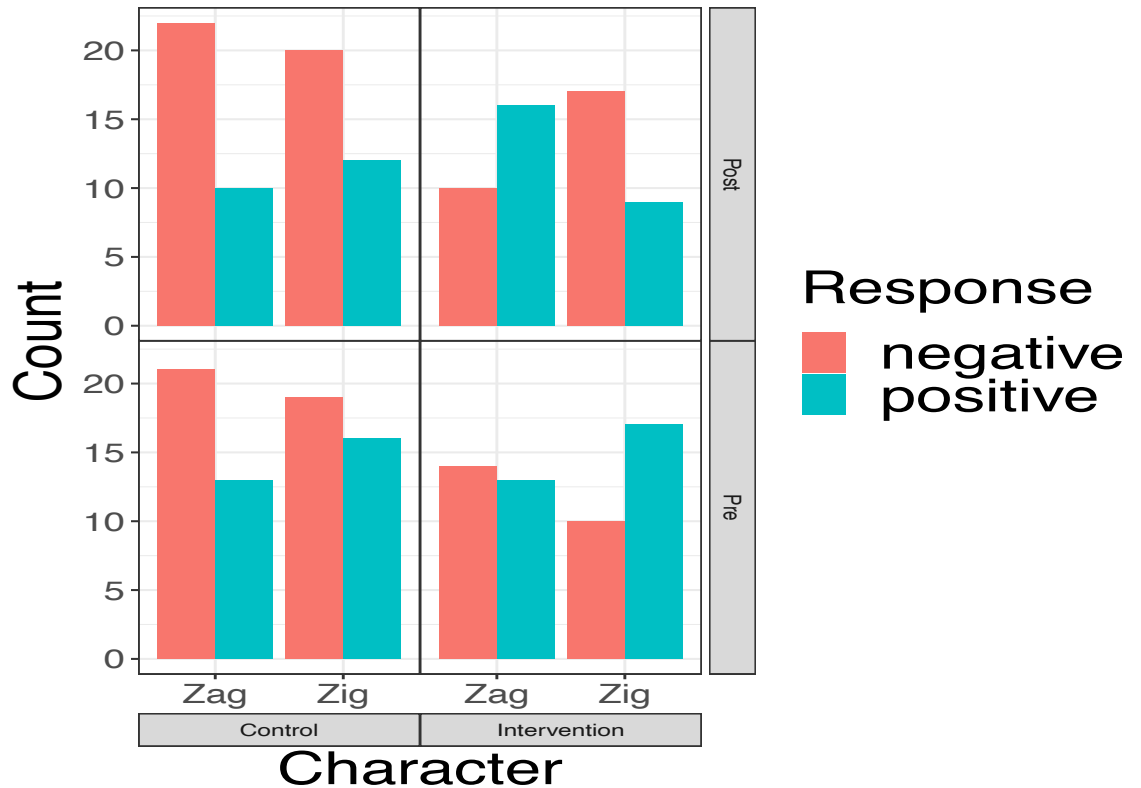
Population variances for pre-intervention scores for Cognitive attitudes (thoughts towards) for the control and intervention groups for Zig/Zag were not significantly different, $F(1, 200)=1.287$, $p=.676$. Shapiro Wilk test indicated approximately normally distributed data indicating the null hypothesis, at the 95% level of significance $p = .005$. In summary, there were no significant differences between our intervention and control groups for any of the outcomes of interest, as expected given the randomisation process.

4.4.2. Hypothesis 2: The intervention group will report significantly more positive attitudes to children (puppets) with SENDs than the control group post-intervention

EYFS - effectiveness of the P4C intervention

EYFS children were presented with an age-appropriate measure which asked them to choose five emojis from a selection of 10 positive and 10 negative emoji facial expressions (described fully in Chapter 3). As data was categorical and had more than two independent variables an extension of the Chi Square (loglinear analysis) was used to test the hypothesis in this group. The following three questions were orally presented to the children: How does Zig/Zag feel at school? How do I describe Zig/Zag? and How do I feel about Zig/Zag? All loglinear frequencies and assumptions of independence were met prior to conducting the analysis.

Figure 4.4 a) Children's responses to How does Zig/Zag feel at school?

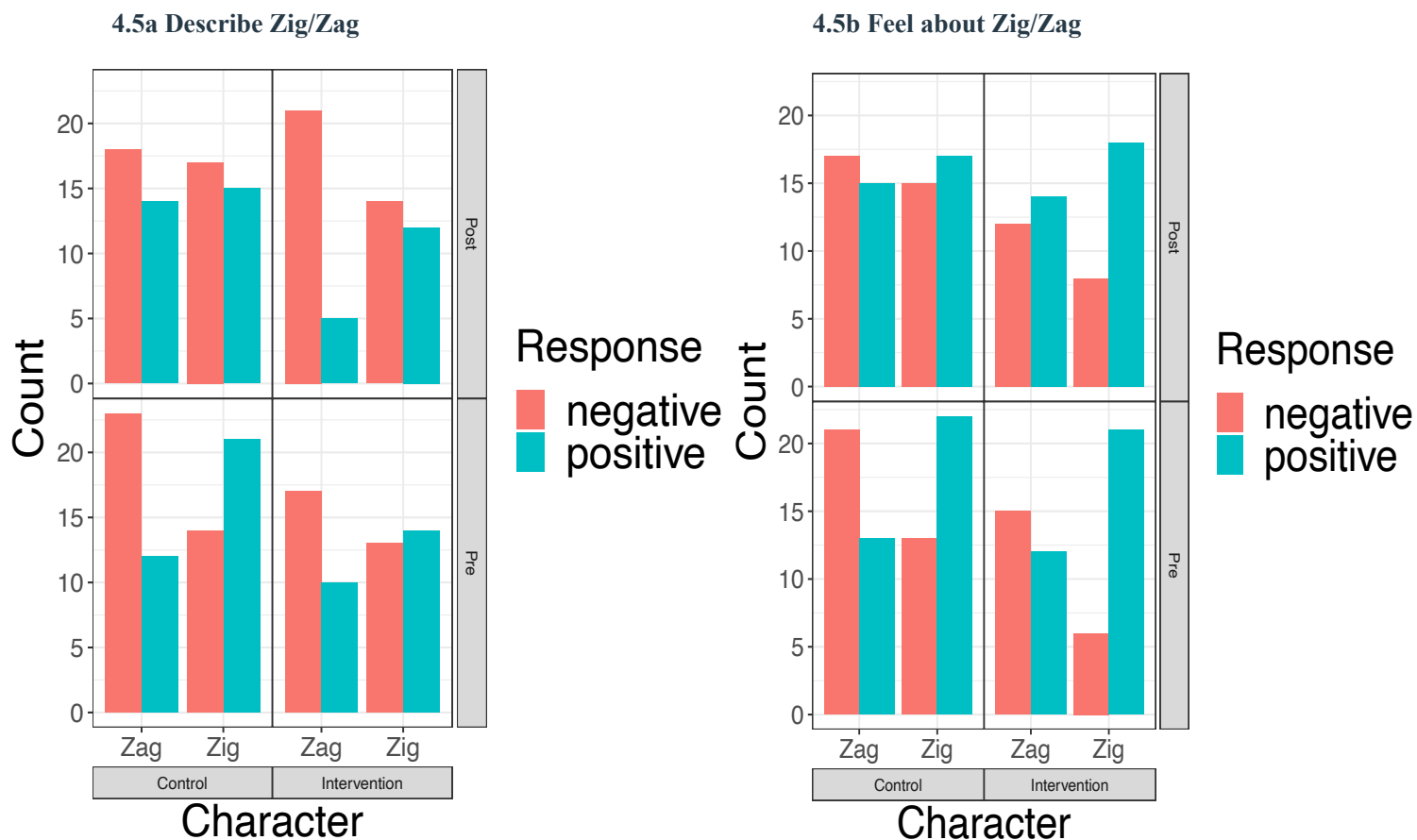


EYFS children were asked to put themselves ‘into the shoes’ of the characters Zig and Zag to give their perceptions of how Zig or Zag might feel at school. Figure 4.4 a) shows a four-way log linear analysis chi-square test of independence which was performed to examine whether the children viewed the day-to-day school experiences of Zig (learning differences) and Zag (behaviour differences) as positive or negative post-intervention. The four-way loglinear analysis produced a final model that retained all effects. The likelihood ratio of this model was $\chi^2 = 7.150$, $p = .7111$, indicating that the highest order interaction (PN x Treatment) was significant, $\chi^2 (1) = 4.38$, $p = .036$. Odds ratios indicated that the odds of the control group being more negative at post-testing were 1.74. We found that the intervention had a significant positive effect on the intervention group participants’ awareness and perceptions of how children with behaviour differences may experience school and the opposite direction for perceptions of how children with learning differences may experience school.

Are any observed effects stronger in relation to children with one type of difficulty ie: learning/behaviour than another?

The children were asked to:

Figure 4.5 a) Children's responses to How do I describe Zig/Zag and b) How do I feel about Zig/Zag



EYFS children were asked to consider how they would describe Zig (learning differences) and Zag (behaviour differences). Children who received intervention did not show any significant difference to the control group in their attitudes. Figure 4.5 a) shows a four-way log linear analysis chi-square test of independence which was performed to examine whether children described Zig (learning difficulties) and Zag (behavioural difficulties) positively or negatively. Assumptions of independence and threshold frequencies were met prior to conducting the loglinear analysis. The four-way loglinear analysis produced

a final model that retained all effects. The likelihood ratio of this model was $X^2(5.8294) = 10, p = .829$. This indicated that the highest order interaction (PN x Zig_Zag) was significant, $X^2(1) = 7.5, p = .006$. Therefore, in this case our hypothesis that there would be a difference between the EYFS experimental and control groups was not supported, $X^2(1) = 1.391, p = .238$.

The analysis did, however, indicate that children described Zig (learning difficulties) more positively than Zag (behavioural difficulties) at post-testing with a significant interaction between Zig and Zag and Positive and Negative variables $X^2(1) = 7.500, p = .006$. Odds ratios indicated that the odds of being more positive at post-testing for both the control and intervention groups for Zig was 2.06 and odds ratio of being more positive at post testing for control and intervention groups for Zag was 0.485. Therefore, the analysis seems to reveal a fundamental difference between attitudes towards Zig and Zag - irrespective of P4C intervention - and as predicted by the literature.

Finally, Figure 4.5 b) shows a four-way log linear analysis chi-square test of independence which was performed to examine how children felt about Zig (learning differences) and Zag (behaviour differences) and whether the children felt positive or negative about the differences. The four-way loglinear analysis produced a final model that retained all effects. The likelihood ratio of this model was $X^2 = 5.796, 10 p = .832$. This indicated that the highest order interaction (PN x Zig_Zag) was significant, $X^2(1) = 9.303, p = .002$. There was no significant difference between control and intervention groups in terms of the intervention having an effect, $X^2 = 2.858, df = 1, p = .090$. These results indicate that our hypothesis, there would be a significant difference between experimental and control groups, was not supported. However, further exploratory investigation revealed that children from both the control and intervention groups viewed Zig (learning difficulties) more positively than Zag (behavioural difficulties) at post-testing, irrespective of intervention.

Odds ratios indicated the chance of being more positive at post-intervention testing for both groups were 0.45 for Zig and 2.24 for Zag. Therefore, the analysis seems to reveal a fundamental difference between Zig and Zag irrespective of P4C intervention, with children viewing learning differences more positively than behavioural differences pre-intervention, with this remaining stable post-intervention, $X^2(1) = 9.303, p = .002$, as predicted by the literature. Figure 4.5 b also highlights the positive change in direction of children's views about Zag.

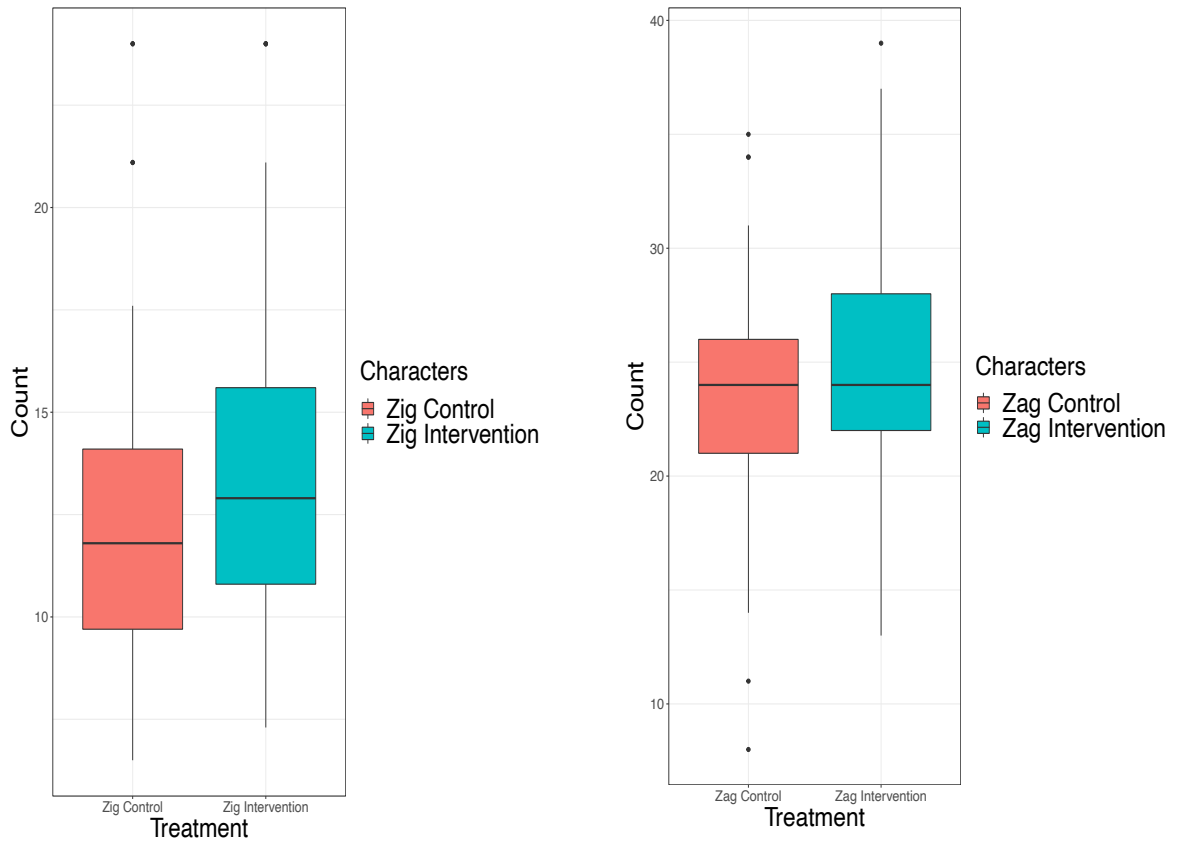
Year 2 and Year 5 - effectiveness of the P4C intervention

To test whether the Year 2/Year 5 control and intervention groups significantly differed in their attitudes to Zig and Zag after the intervention an ANCOVA was carried out, correcting for pre-intervention scores and comparing several covariate means (affective, behavioural and cognitive attitudes). Before analysis all independent variables and covariates for the three groups were independent. A test for homogeneity of variance was conducted for the variable TZ (Treatment Zig/Zag) and then a Type III ANOVA encoded with orthogonal contrasts. This was the most suitable Sum of Squares (Type III) for this data set as the sample size between control and intervention groups were unequal and this statistical test tested main effects in conjunction with interactions. Assumptions of homogeneity of variance and the normality of residuals were tested and are presented in Figure 4.6. Assumption evaluations indicated that the normality, homogeneity of variance, linearity and homogeneity of regression slopes assumptions were all satisfactory and had not been violated.

Figure 4.6 a) *Affective (feelings) of Zig (learning differences) and c) Cognitive (thoughts) about Zag (behaviour differences)*

a) Affective (feelings) Zig (learning differences)

c) Cognitive (thoughts) Zag (behaviour differences)



Affective (feelings) attitudes among Year 2/Year 5 participants

A two-way ANCOVA was performed to examine the effects of Intervention on affective attitudes to individuals with learning and behavioural differences, after controlling for pre-intervention scores. There was a statistically significant two-way interaction between affective post-intervention scores for Treatment Zig/Zag, whilst controlling for Pre test scores, $F(3, 199) = 2.957, p = .033$ (Figure 4.6a). In summary planned contrasts revealed that for affective attitudes towards Zig the intervention group showed significantly more improvement than the control group, $t(199) = 2.697, p < .05$ (one-tailed), with a small effect

size (hedges $g = -.23$). Trend analysis indicated a linear trend $t = 4.58$ and this value is significant at $p > .001$. Therefore, it can be said that the intervention sessions increased affective attitudes proportionately, meaning that the intervention group mean scores increased positively. Quadratic trend analysis was not significant $t = 0.574, p = .567$. Post hoc Tukey testing indicated differences in adjusted means of Zig Intervention to Zag Intervention ($p > .001$), Zig Intervention and Zag Control ($p = .001$) and Zig Control and Zag Control ($p = .033$). Therefore, at post-intervention the intervention group reported significantly more positive feelings towards Zig (learning differences) than the control group, but the between-group differences for Zag (behaviour differences) were non-significant. This finding indicates that intervention may improve affective attitudes towards individuals with learning difficulties.

Behavioural attitudes/intentions among Year 2/Year 5 participants

A two-way ANCOVA was also performed to examine the effects of the P4C intervention on post-intervention behavioural attitudes/intentions to learning (Zig) and behaviour (Zag) differences, after controlling for pre-intervention scores. There was no statistically significant two-way interaction between behaviour scores post-intervention for intervention and control groups, whilst controlling for pre-intervention scores, $F(3, 199) = .715, p = .544$. Planned contrasts revealed that for the behaviour aspect there was no significant differences in any of the contrast groups. The trend analysis was $t = 2.874$ and this value is significant at $p = .004$. Therefore, we can say that all the groups increased in their behaviour attitudes proportionately. Post-hoc Tukey testing indicated differences in adjusted means of the Zig (learning differences) Intervention group compared with the Zag (behaviour differences) Intervention group ($p = .024$) and Zig Intervention and Zag Control ($p = .028$). In summary, findings indicate that everyone was more positive in their behavioural intentions post-intervention but there was no difference between control and intervention groups so the improvement cannot be attributed to the intervention.

Cognitive (thoughts) among Year2/Year 5 participants

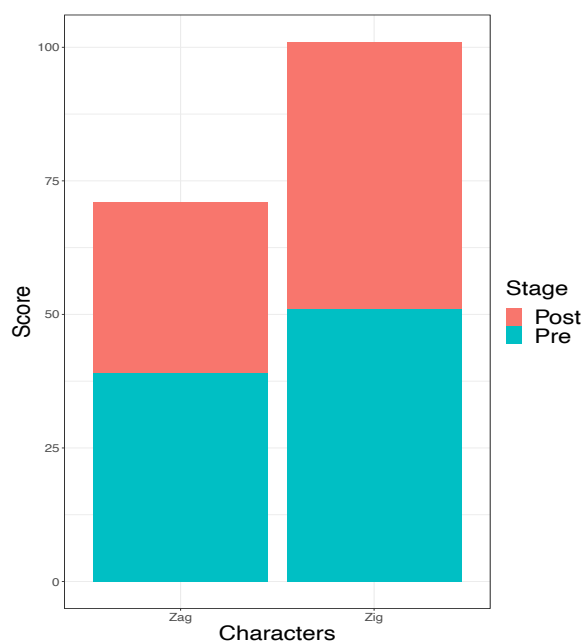
Finally, a two-way ANCOVA was performed to examine the effects of the intervention on cognitive attitudes (thoughts) towards Zig (learning differences) and Zag (behavioural differences), after controlling for pre-intervention scores. There was a non-significant two-way interaction between cognitive post-intervention scores for the control and interventions groups Zig and Zag, while controlling for pre-intervention scores, $F(3, 199) = 2.202, p = .089$. Planned contrasts showed that for the cognitive aspect of attitude there was no significant difference between the intervention and control groups. However, it can be noted that there was an observed difference, with slightly more positive cognitive attitudes in the intervention group, that came close to statistical significance $t(199) = -1.918, p = .056$, (hedges $g = -.34$), and may have reached significance in a better powered (larger) sample (Figure 4.6c). Trend analysis indicated a positive linear trend $t = 2.22$ and this value was significant at $p = .027$. Therefore, we can say that the Cognitive aspect of Attitudes increased proportionately. Quadratic trend analysis was not significant $t = .574, p = .567$, which tells us that there was no change in direction (or curve) of the line. Post-hoc Tukey testing indicated no differences in adjusted means of all the comparison groups. In summary the planned contrasts revealed that the P4C intervention came close to having a significant effect, improving cognitive attitudes towards Zag (behavioural difficulties), but that the sample was –possibly – underpowered to detect it.

4.4.3. Hypothesis 3: Children will be more positive about someone with learning difficulties than with behavioural difficulties

EYFS Post Zig (learning differences) to Post Zag (behaviour differences) – are preferences maintained?

To address whether children felt more positive towards Zig (learning differences) or Zag (behaviour differences) EYFS children were asked whether they would like to be friends with Zig (learning differences) or Zag (behaviour differences) at both pre- and post-testing. A four-way log linear analysis chi-square test of independence was performed to examine whether children would want to be friends with Zig (learning differences) and/or Zag (behaviour differences).

Figure 4.7 EYFS children's responses at Pre and Post testing – Would you be friends with Zig (learning differences) and Zag (behaviour differences)?

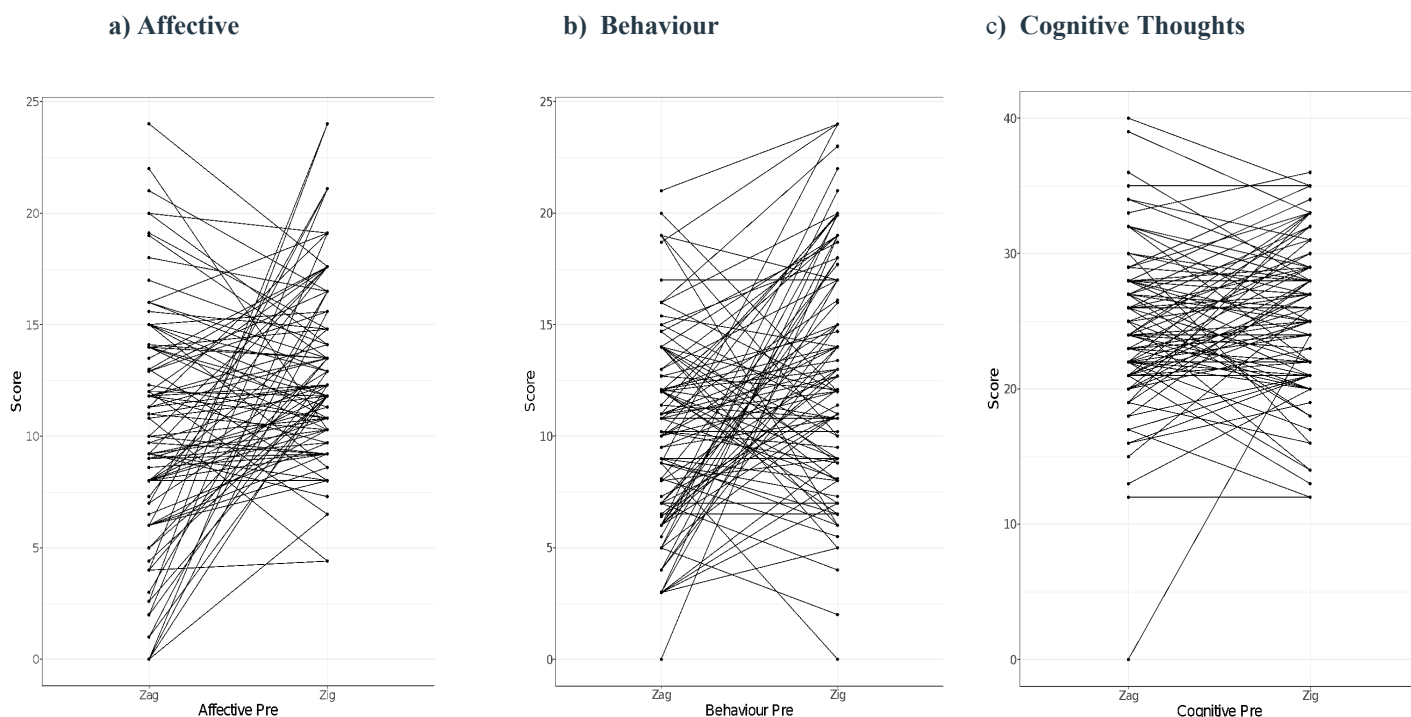


In most circumstances responses from the children indicated that pre-intervention children (in both control and intervention groups) preferred to be friends with Zig with learning differences compared to Zag with behaviour differences, and post-intervention testing indicated a further increased positive response towards Zig with learning differences. The four-way loglinear analysis produced a final model that retained all effects. The likelihood ratio of this model was $X^2 = 3.451, 10, p = .969$. This indicated that the highest order interaction (Score x Zig_Zag) was significant, $X^2(1) = 17.733, p < .001$. Meaning that there was a significant difference between the children preferring Zig (learning differences) over Zag (behaviour differences). There were no significant difference between control and intervention groups, $X^2(1) = 0, p = 1$. Children from both the control and intervention groups were more likely to say they would want to be friends with Zig (learning differences) than Zag (behavioural differences). Odds ratios indicated children were still more negative towards Zag (2.43) than Zig (0.70) at post-testing. In summary Figure 4.7 indicates EYFS children at pre-intervention preferred to be friends with Zig (learning differences) and this effect was maintained at post-testing, regardless of whether children were in the intervention group or the control group.

Pre-testing Year 2/Year 5 –differences between Zig (learning difficulties) to Zag (behaviour difficulties)

We asked whether, pre-intervention, children were more positive in their affective and cognitive attitudes, and behavioural intentions, towards an individual with learning difficulties (Zig) than an individual with behavioural difficulties (Zag). Figure 4.8 shows how positive children are towards Zig (learning differences) to Zag (behaviour differences) irrespective of control or intervention groups. Each line shows each child's response and how positive each child was towards Zig (learning differences) and to Zag (behaviour differences). Figure 4.8a indicates the response from each child when describing Zig and Zag and shows that children felt more positive towards Zig at pre-testing. Figure 4.8b reports how children would act towards Zig and Zag and again children report more positivity towards Zig (learning differences). Figure 4.8c however indicates no significance difference in children's thoughts regarding Zig (learning differences) and Zag (behaviour differences) at pre-testing.

Figure 4.8 Pre testing – which puppet do children feel more positive towards? Zig (learning differences) or Zag (behaviour differences). a) Feelings towards Zag (behavioural differences) to Zig (learning differences), b) Behaviour towards Zag (behavioural differences) to Zig (learning differences), c) Thoughts about Zag (behavioural differences) to Zig (learning differences)



Before intervention, children’s views about which puppet they were more positive about were assessed. A paired samples t-tests showed that children's attitudes were more positive towards Zig than Zag. This was found for affective attitudes (feelings towards) ($t=4.546$, $df= 101$, $p < .001$). The mean difference between Zig and Zag was 2.95 (95% CI:1.66 to 4.25). A Shapiro-Wilk test indicated approximately normally distributed data indicating the null hypothesis, at the 95% level of significance $p=.43$ for Zig and $p= .428$ for Zag. Children’s behavioural intentions were significantly more positive towards Zig (learning differences) than Zag (behaviour differences) ($t=4.229$, $df= 101$, $p < .001$). The mean difference between Zig and Zag was 2.68 (95%CI:1.42 to 3.93). Shapiro-Wilk test indicated approximately normally distributed data indicating the null hypothesis, at the 95%

level of significance $p=.32$ for Zig and $p=.375$ for Zag. When comparing the cognitive aspect of attitude towards Zig (learning differences) to Zag (behaviour differences) findings indicated no significant difference in attitude (paired t-test: $t= 1.273$, $df= 101$, $p = .206$). The mean difference between Zig and Zag was 2.68 (95%CI: - .410 to 1.88). A Shapiro-Wilk test indicated approximately normally distributed data indicating the null hypothesis, at the 95% level of significance $p= .151$ for Zig and $p= .001$ for Zag. In summary Figure 4.8 indicates partial support for the hypothesis that at pre-intervention children would be more positive towards learning differences than behavioural differences. The Affective (feelings) aspect of attitude and Behaviour (behaviour towards) aspect of attitude did indicate children's preference for Zig (learning differences), but children showed no preference for Zig (learning differences) or Zag (behaviour differences) in terms of the Cognitive (thoughts) aspect of attitude captured by the CATCH measure.

Post-testing Year 2/Yr5 –differences between Zig (learning difficulties) to Zag (behaviour difficulties)

Children's perspectives were analysed at post-testing to see if the children's views from both the control and intervention groups had altered. For Year 2/Year 5 participants a paired samples t-test for Affective (feelings), Behaviour (behaviour towards) and Cognitive (thoughts) about Zig (learning differences) and Zag (behavioural differences) was conducted to investigate how children viewed Zig (learning differences) to Zag (behaviour differences) at post-testing.

Figure 4.9 Post testing – which puppet do children feel more positive towards? Zig (learning differences) or Zag (behaviour differences). a) Feelings towards Zag (behavioural differences) to Zig (learning differences), b) Behaviour towards Zag (behavioural differences) to Zig (learning differences), c) Thoughts about Zag (behavioural differences) to Zig (learning differences)

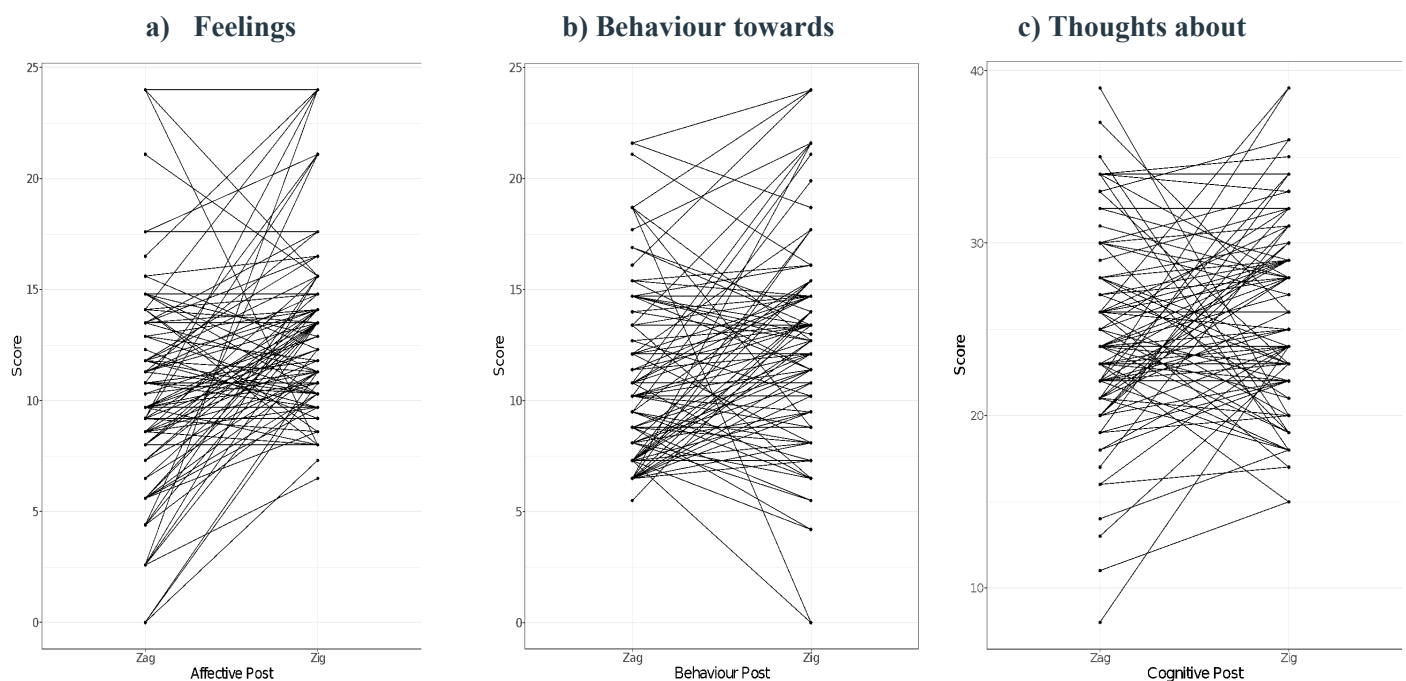


Figure 4.9a shows the results from post testing which shows all children’s feelings (Affective) towards Zig (learning differences) compared to Zag (behaviour differences). The children’s choices indicate that their feelings were still more positive towards Zig (learning differences) than Zag (behaviour differences) after intervention $t(101)= 5.605, p < .001$. The mean difference scores for how participants felt about Zig compared to Zag was 2.95 (95%CI: 1.909 to 4.00). The Shapiro-Wilk test indicated approximately normally distributed data indicating the null hypothesis, at the 95% level of significance $p < .001$ for Zig and $p = .006$ for Zag. In summary everyone was still more positive in their feelings towards Zig (learning differences) than Zag (behaviour differences) post-intervention. A paired samples t-test was

also used to test behavioural attitudes towards Zig (learning differences) compared to Zag (behaviour differences), post-intervention. Figure 4.9b indicated that children's behavioural intentions were still more positive towards Zig (learning differences) than Zag (behaviour differences) $t(101) = 3.381, p = .001$. The mean difference between behavioural attitudes towards Zig and Zag was 1.623 (95%CI: 0.671 to 2.576). Shapiro-Wilk test indicated approximately normally distributed data indicating the null hypothesis, at the 95% level of significance $p = .003$ for Zig and $p < .001$ for Zag. Figure 4.9c shows children's views of Cognitive (thoughts) about Zig (learning differences) compared to Cognitive (thoughts) about Zag (behaviour differences) which indicated that children's thoughts showed no significant preference towards Zig (learning differences) or Zag (behaviour differences) $t(101) = 1.781, p = .078$. The mean difference between Zig and Zag was 1.147 (95%CI: -0.1307 to 2.425). Shapiro-Wilk test indicated approximately normally distributed data indicating the null hypothesis, at the 95% level of significance $p = .296$ for Zig and $p = .723$ for Zag.

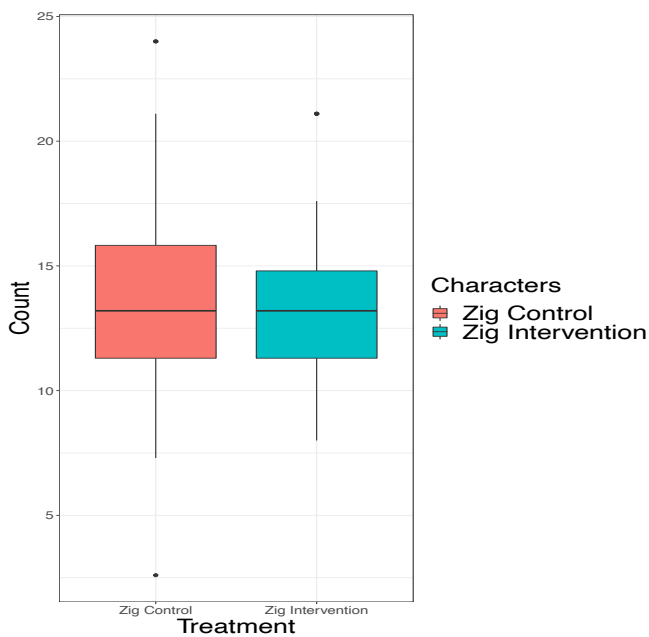
In summary post testing indicated that all children, irrelevant of control or intervention groups, still felt more positive towards Zig (learning differences) compared to Zag (behaviour differences) in their feelings (Affective) and behaviour (Behaviour towards) aspects of Attitude and with their thoughts (Cognitive) aspect remaining the same. This supported the hypothesis that children would be more positive towards someone with learning differences than someone with behaviour differences and that this effect was stable over a period of time. Table 4.2 also indicated that the median scores for Control groups Zig/Zag and Intervention groups Zig/Zag remained unchanged.

4.4.4. Hypothesis 4: If an effect of intervention is found immediately after intervention it will no longer be evident at delayed post-testing at 12 weeks

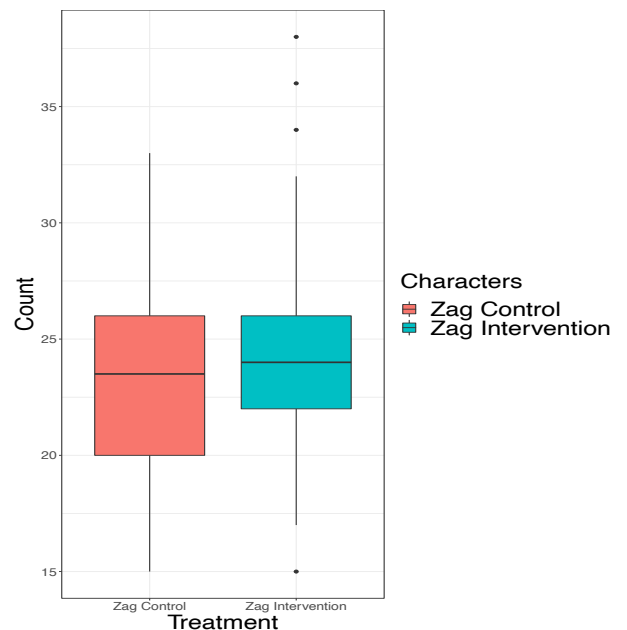
Year 2/Year 5 Affective attitudes indicated significant effects of the P4C sessions immediately after intervention. This was almost the case with the Cognitive aspect of attitudes, although the finding was not statistically significant. Delayed post-intervention data was collected from School 1 twelve weeks after the initial post-intervention data collection but, due to COVID 19, data collection for School 2 was not collected (See Chapter 3, Methods, Procedure). Therefore, only School 1 data for the Affective and Cognitive aspects of attitudes is presented here.

Figure 4.10 a indicates school 1 children’s feelings towards Zig (learning differences), **b** indicates school 1 children’s thoughts towards Zag (behaviour differences) at delayed post testing (12 weeks after post testing)

a) Delayed post-testing Affective (feelings) towards Zig (learning differences) – school 1



b) Delayed post-testing Cognitive (thoughts) towards Zag (behaviour differences) – school 1



Affective (feelings) and Cognitive (thoughts) attitudes among Year 2/Year 5 participants at delayed post testing

Twelve weeks after the intervention, and initial post-intervention testing, further data was collected and another two-way ANCOVA was performed to examine whether the significant effects of the Intervention on affective attitudes towards individuals with learning differences had been maintained, after controlling for post-intervention scores. Figure 4.10a indicates that Contrast 3 which compared Control Zig to Intervention Zig showed a statistically significant two-way interaction, $F(4, 135) = 4.001, p = >.01$. In summary planned contrasts revealed that due to a significant increase in attitudes in the Control group there was no significant difference between Control and Intervention groups for Affective attitudes (feelings) towards Zig three months after the intervention. This result supports our hypothesis that any significant effect found at post-testing would be lost, or decline with the control group catching up, 12 weeks later at delayed post testing. This was the same for the Cognitive (thoughts) aspect where Figure 4.10b indicates that Contrast 2 which compared Control Zag to Intervention Zag (behaviour differences) showed no significance $F(4, 135) = 1.544, p = .124$.

However, exploratory analysis revealed that Contrast 3 showed significance when comparing Control Zig to Intervention Zig $F(4, 135) = 2.262, p = .025$, indicating a positive significant difference in attitudes towards thoughts about learning differences. Given that delayed post-test data was only gathered from School 1, the loss of power caused by lack of access to School 2 on these results is a limitation.

4.5. Exploratory Analysis 1: Genetic findings – EYFS, Year 2, Year 5

As one aim of the current study, beyond testing the efficacy of the P4C intervention in an RCT design, was to understand children's perspectives and understanding of genetic

influences on learning and behaviour, three exploratory questions were asked of all children at post-intervention but not pre-intervention. The three questions do not differentiate between Zig or Zag, learning or behavioural differences. This was purposeful as we aimed to elicit children's views of intergenerational transmission and to keep the duration of data collection to a minimum.

Exploratory Question 1: When Zig or Zag grows up it falls in love with another shape called Zog. They have a beautiful baby shape called Zeggy. They worry that baby Zeggy might find learning or behaving properly tricky like Zig or Zag. Do you think they should be worried about this?

Exploratory Question 2: They hear that you can find out whether there is a good chance of baby Zeggy finding learning or behaviour tricky by going to the doctor for a test that doesn't hurt a bit. Do you think they should do this?

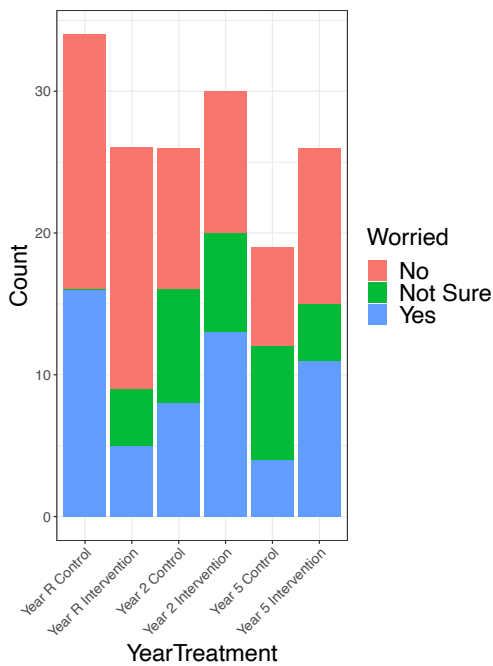
Exploratory Question 3: If you were Zig or Zag or Zog would you want baby Zeggy to have this test?

Chi-square was used to test for differences in how children in the control and intervention groups answered these questions and all assumptions of independence were met.

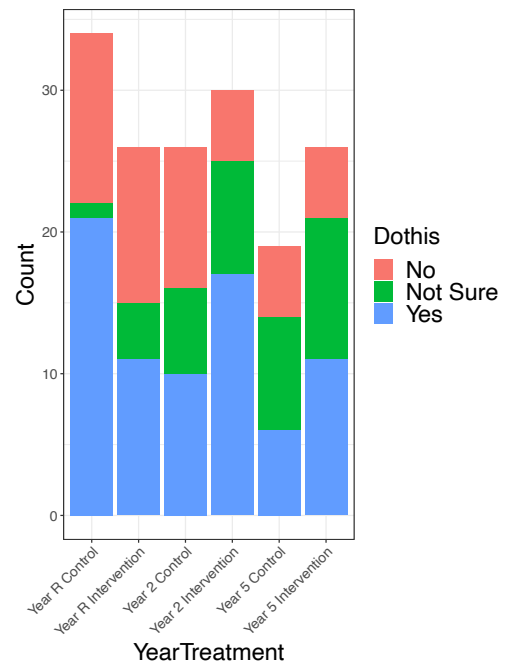
4.6. Genetic Questions posed to EYFS, Year 2 and Year 5 children

Figure 4.11a. Question 1: *When Zig or Zag grows up it falls in love with another shape called Zog. They have a beautiful baby shape called Zeggy. They worry that baby Zeggy might find learning or behaving properly tricky like Zig/Zag. Do you think they should be worried about this?* **4.11b. Question 2:** *They hear that you can find out whether there is a good chance of baby Zeggy finding learning or behaviour tricky by going to the doctor for a test that doesn't hurt a bit. Do you think they should do this?* **4.11c. Question 3:** *If you were Zig or Zag or Zog would you want baby Zeggy to have this test?*

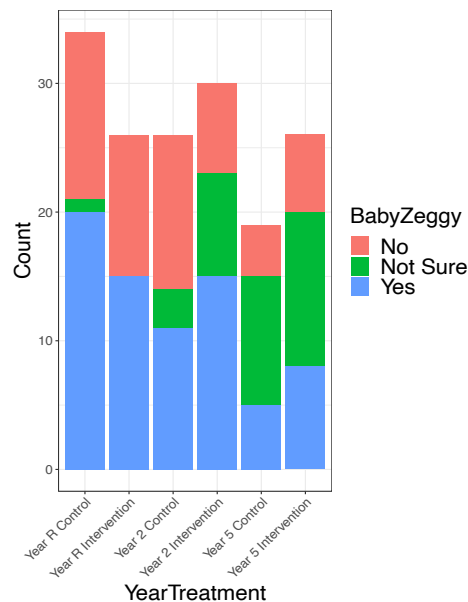
a) Question 1



b) Question 2



c) Question 3



How do the three year groups differ from each other?

Chi-square testing showed a significant difference between the EYFS control and intervention groups $\chi^2(2) = 8.88, p = .012$, for question 1: Do you think Zig/Zag should be worried about Zeggy growing up with learning or behaviour differences. The Contingency table indicated a significant difference between the control and intervention groups' yes responses, 76% to 24% respectively, and 0% compared to 100% for the Not Sure response. In sum, three quarters of the children who had received the intervention said that Zig/Zag should be worried, compared to only one-quarter in the control group (See Chapter 8 RQ3 for further discussion). Year 2 Contingency tables indicated for control and intervention No responses 50% and 50% respectively, 53% and 47% for Not Sure responses and 38% and 62% for Yes responses to question 1. In sum, No and Not Sure responses were almost equal for control and intervention groups but Yes responses for those who received intervention were higher. The Year 5 Contingency table reports 39% and 61% for control and intervention groups, No response 67% and 33%, Not Sure responses and 27% and 73% for Yes responses. In sum, those who received intervention reported more No and Yes responses but fewer Not Sure answers than children in the control condition. However, Figure 4.11a. Question 1 indicates there were also significant differences between year groups in how they responded to the No, Not Sure, Yes question, $\chi^2(4) = 11.188, p = .025$, with all year groups who received intervention reporting more Yes responses to being worried, compared to the control groups. This may indicate that intervention has increased the children's awareness of learning and behaviour differences, which in turn has increased worry about having these differences (See Chapter 8, RQ3 for discussion).

There was also no significant difference between the control and intervention groups in whether the children thought that baby Zeggy should have a test to see if it would have learning or behaviour difficulties, $\chi^2(2) = 2.071, p = .355$. However, Figure 4.11b. Question 2 shows significant differences between year groups, $\chi^2(4) = 15.212, p = .004$ with EYFS children reporting from the control and intervention groups, No responses 51% and 47% respectively, Not Sure responses 20% and 80% and Yes responses as 66% and 34%. In sum, EYFS children who received intervention reported increased Not Sure responses and less Yes responses compared to the Control group. Year 2 control and intervention groups reported 67% and 33% for No responses respectively, 43% and 57% for Not Sure responses and 37% and 63% for Yes answers. In sum, children who received intervention reported more Yes responses to Zeggy having a test to see if it had behaviour or learning differences compare to the control group who reported a greater number of No responses, potentially reflecting their greater level of reported worry. Year 5 reported equal No responses 50% for control and intervention groups, 44% and 56% for Not Sure responses and 35% and 65% for Yes answers respectively. In Sum the responses of Year 5 children indicated that those who received intervention showed a greater Yes response to Zeggy being tested for learning or behaviour differences. Overall, a key finding from the data suggests Year 2 and Year 5 children who received intervention were more likely to say yes when asked if Zeggy should be tested for learning and behaviour differences.

Finally, Figure 4.11c. Question 3 indicates that there was no significant difference between the control and Intervention groups in their views regarding whether - if they were Zig/Zag or Zog they would want baby Zeggy to have this test, $\chi^2(2) = 1.052, p = .590$. However, there were significant differences between year groups, $\chi^2(4) = 35.666, p < .001$ with EYFS children reporting No responses in control and intervention groups at 54% and 46% respectively, 100% and 0% for Not Sure responses and 57% and 43% reporting a Yes

response. Year 2 reported 63% and 37% for control and intervention No responses, 27% and 73% of Not Sure responses and 42% and 58% Yes responses. Year 5 Contingency tables indicates 40% and 60% of No responses for control and intervention groups respectively, 45% and 55% of Not Sure responses and 38% and 62% of Yes responses to question 3. In answering this question Year 2 and Year 5 indicated a greater number of children recording Not Sure responses, which could possibly reflect a growing nuance in their understanding of what testing for learning and behaviour differences might mean, especially when faced with making a decision about someone else.

In summary, responses to the three genetic questions posed to the children indicate that there is a significant difference between control and intervention groups in EYFS, question 1, when asked if Zeggy's parents Zig/Zag/Zog should be worried about it growing up with learning or behaviour differences. Intervention group children reported being significantly more worried than the control group. Also, between year groups responses were significantly different highlighting increased worry about learning and behaviour differences, increased likelihood of supporting testing for learning or behaviour differences and increased unsureness about testing when putting themselves into the shoes of someone else. Question 2 and 3 are very similar but fundamentally different, as question 2 asks the children to think about the usefulness of genetic testing to help find out about learning or behavioural differences and question 3 asks the children to put themselves into the shoes of the puppets Zig, Zag and Zog and what they might do if it were them deciding. Both questions yielded data with similar distributions which not only suggests that the children understand what is being asked but also the nuanced difference between the questions, particularly were there are slightly increased numbers of Unsure responses. This suggests that the children understood the question and are mindful and cautious of the decisions they make especially when asked to 'put themselves into Zig/Zag and Zog's shoes' to decide whether they should

test Zeggy or not. A content analysis of the open-ended parts of each of the questions was conducted to explore these findings in greater depth and is reported in Chapter 6. A thematic analysis of the transcripts of the final P4C session, which focused specifically on understanding what children think about having differences and where those differences originate, is further explored in Chapter 7.

4.6.1. Summary of Key Findings

Year 2 and Year 5 intervention group children's feelings (affective attitudes) towards Zig (learning difficulties) were significantly more positive, post-intervention, than those of children in the control group. This did not apply to Zag (behaviour differences). Delayed post-testing of school 1 indicated that all effects had been lost.

Just missing the threshold for statistical significance, children in the intervention groups reported more positive thoughts (cognitive attitudes) towards Zag post-intervention than children in the control group. This did not apply to Zig (learning differences). Delayed post testing data from school 1 also indicated that effects for thoughts about Zag had been lost, however, the data indicated a significant increase in the intervention group's thoughts towards Zig (learning differences).

The children's behavioural attitudes to both Zig and Zag showed no significant differences between control and intervention groups. The qualitative data analysis in Chapter 6 (Content analysis) and Chapter 7 (Thematic Analysis of P4C sessions) may shed light on the reason for no changes in behavioural attitudes.

When children from EYFS answered Question 2: 'how does Zig/Zag feel at school' – they were asked to put themselves into the shoes of the Zig/Zag characters. The intervention group was less negative about their perceptions of Zig/Zag's school experiences than the control group. This indicated that the children, after intervention, may have had a better

perceived awareness of the challenges faced by children with learning and behavioural differences as the intervention may have led to understand what life might be like for other children with learning or behaviour differences. Qualitative data gathered from this question helped to elucidate the reasons for this response (See Chapter 6, Content Analysis).

When answering the question ‘how do I describe Zig/Zag?’, children in EYFS indicated that, irrespective of P4C intervention, they had some entrenched views about learning differences and behavioural differences, describing Zig (learning differences) more positively. This was also the case for Year 2 and Year 5 children. The possible reasons for this are supported by the literature about psychological essentialism and genetic essentialism and are discussed in Chapters 6 and 7.

In answering the question ‘how do I feel about Zig/Zag?’, EYFS children indicated that all the children in the sample, irrespective of the intervention sessions, were more positive towards Zig with learning differences. This is further discussed in Chapter 7.

There was no change after intervention, when EYFS children answered the question ‘Would you be Zig/Zag’s friend?’. Data indicated that all children, irrespective of control and intervention groups, were more positive about having a friend with learning differences than a friend with behavioural differences.

Chapter 5

5. Process Evaluation of RCT

5.1 Challenges of Conducting Intervention Research in Classrooms

Randomised Control trials (RCTs) are thought to be a “gold standard” of testing what works (Styles & Torgerson, 2018). However, creating and maintaining experimental conditions can be challenging in ‘real-world- settings’ such as schools (Hein & Weeland, 2019, p. 3). Indeed, there are many methodological and practical challenges, over and above experimental conditions, such as recruitment to studies (Styles & Torgerson, 2018), drop out, gatekeeper effects (Dawson et al., 2018), consent and ethics (Burnett & Coldwell, 2020), ensuring randomisation (Higgins, 2017) and avoidance of selection bias (Smith, 2020). RCTs in education also carry internal validity threats such as control group ‘contamination’ (Hein & Weeland, 2019, p. 9), compensatory rivalry and resentful demoralization (Ong-Dean et al., 2011). It is vital, therefore, to carry out a robust implementation and process evaluation to give a deeper understanding of factors that may impact study outcomes (Dawson et al., 2018). These challenges are discussed in the following process evaluation which explores fidelity to the protocol and quality of implementation.

5.1.1. Process Evaluation of Implementation of P4C sessions

P4C was usual practice within both study schools and the P4C ethos was already embedded in the school curriculum – this was a criterion for selection into the study. This study was therefore embraced by both schools who were already on a journey of developing their understanding of how accepting and tolerant children were of diversity in learning and behaviour, particularly in School 1. Baseline pre-testing indicated that there were no significant differences between control and intervention groups pre-intervention for

Affective, Behaviour or Cognitive aspects of attitude and subsequent Content Analysis and Thematic Analyses (presented in Chapters 6 and 7) explained more about the children's thoughts about learning and behaviour differences, indicating that there was definitely still work to be done to promote positive attitudes in the school. This point is emphasised in my field notes. For instance, a discussion between myself and a class teacher in School 2 indicated that although children might show awareness and understand why particular children behave in a certain way (because of their differences in learning and behaviour) other children in the class still react to the behaviours displayed by those with differences and cover their ears and laugh when a child displays visible symptoms of their difference by being upset/frustrated. The study also offered schools the opportunity of independent observation and recording of P4C sessions which both schools needed as evidence to support and to obtain a SAPERE Gold award for P4C practice. Therefore, there was a good level of commitment to the study and its aims.

5.1.2. Fidelity

Fidelity to the protocol of the intervention in the intervention groups was judged in two ways: the regularity of implementation and the quality of adhering to the overall question and stimuli (See Table 5.1). Neither school fully implemented the P4C intervention according to the guidance protocol provided by the researcher. Changes to implementation plans, which were not agreed in advance of the session, included teachers altering and adding/changing stimuli in sessions, teacher bias regarding the narrative used in a session, not feeling able to fully implement P4C in EYFS due to age/stage of P4C skills development. Further, in School 1 a control group activity took a very similar approach and focus to the intervention in spite of an agreement to work on something completely different. This may have impacted control group attitudes and scoring at post testing in this particular class.

Table 5.1 Facilitation of Key Question and Stimulus in P4C intervention sessions

Session	Year Group and stimulus details	School 1 & 2 Researcher Design Features (intended outcomes)	School 1 Fidelity - When and how design decisions were altered	School 2 Fidelity - When and how design decisions were altered
		Guidance P4C planning provided to both schools to give overview of sessions: Provided carefully considered concepts to ensure sessions were positive about discussing sensitive issue of disability/differences (learning/behaviour) Caveat – planning can be adapted for each session but main question and stimulus must remain the same	Adapting guidance planning to become more philosophical Year 5 - Additions to stimulus (ppts and video clips)	
1 ‘What Makes Me, Me?’ Question: What does my super-hero label say about me? Getting at differences to be proud of and could lead onto a discussion of differences that are less appealing	YR (EYFS)/Yr2/Yr5 Reading Don’t Call Me Special Think about: What are you good at? What do you find difficult?	To think about the use of labelling – either positively or negatively and the impact this might have on ourselves and others To make name label (resources provided) to encourage children to think about their strengths and what their superhero name says about them. Children to write superhero name on special badge using pens, pencils (to use for each P4C session). Adult to support Reception children where applicable. Session to encourage: why name chosen, are ideas the same as someone else or different, how do you feel about this, what if I disagree with someone else’s name?, what if someone challenges my superhero name?, should we all have the same powers? Would it matter if the super-hero didn’t have eyes, arms, legs, moved differently, thought differently, behaved differently? Is there a perfect person? Why might your superhero name not be accepted by the group? Why might this happen?, suggest ways to fix a superhero to be perfect.	EYFS Initials of children used instead Use of super hero name deemed too complicated for children – may take literally Lanyards not used – perceived too dangerous (concerns about having something around neck) – see Chapter 3 methodology Warm up activity reduces session implementation/discussion time (see Table 4.4) Year 5 Stimulus not used (Don’t Call Me Special) Ppt adaptation used instead with added video clips of wheelchair user Stephen Hawkins, runners who run with support (unintentional positive outcome)	EYFS Initials of children used instead Making name labels completed during choosing time but not used within session Circle time methods used instead of P4C – increasing wait time to speak and reducing ‘bouncing ideas/challenges/discussion’ across the circle (P4C skill)
2 ‘Differences’ Question: What is it like to know someone who is different – does it matter if others think or behave differently? What is like to know someone who is different? (perceptions of others)	YR (EYFS)/Yr2/Yr5 Identifying different perspectives Do you know of anyone who may have these super powers? How does it make you feel if someone tells you something about yourself that you do not want to hear? Are they being rude? Can they help it? Would you feel worried about being a friend with someone who is different? Would you feel worried about being a friend with	Thinking about differences – does it matter that someone may think or behave differently? Session to encourage: Do you know of anyone who may have these super powers?, How does it make you feel if someone tells you something about yourself that you do not want to hear? Are they being rude? Can they help it? Would you feel worried about being a friend with someone with these differences? To discuss if it matters that Isaac may think and act differently.	EYFS Warm up activity reduces session implementation/discussion time (see Table 4.4) Year 5 Stimulus used described as aimed at young children (introduced as second stimulus). Added video clip (3 ½ minutes long) My Autism and Me – raised discussion about differences/comparison to clip leading children diagnosing each other from within class (unintended negative outcome) but final thoughts about the session indicated that children had clarified their understanding of differences and	EYFS Warm up activity reduces session implementation/discussion time (see Table 2)

	someone with these differences?		discussed/debated very sensitive issues in a positive way	
<p>3 ‘Knowing and loving someone who is different’ Question: What is it like to know and love someone who is different? (step into anothers' shoes).</p>	<p>YR (EYFS)/Year 2 Finding out what disability is Learning how people deal with their disabilities to live happy and full lives. Glossary of definitions included. Year 5 Personal experiences of children with siblings who have a brother or sister with a disability – explained from their view point (child’s voice). Glossary of definitions included.</p>	<p>To understand the perceptions of others – siblings view of brother/sister with differences</p>	<p>EYFS Warm up activity reduces session implementation/discussion time (see Table 4.4)</p> <p>Year 5 Job share teacher facilitated P4C session – introduced child’s narrative as ‘story’ and an old book written a long time ago – not recognising child’s voice/unconscious bias around text language, concern about facilitating session – negative impact of children with SEND in class</p>	<p>EYFS Stimulus (book) not used (stimulus viewed as another story book – children do not have attention span/focus). Video clip around similarities and differences used instead – what do the children notice. Session didn’t support answering the overriding question.</p>
<p>4 ‘Differences from the inside or outside?’ Question: Are babies different to each other when they are born or do they become different growing up?</p> <p>Why are some people different? (nature or nurture). Explore causes of difference and free choice in how you behave (e.g. something inside you?)</p>	<p>YR (EYFS)/Yr2/Yr5 BBC Teach – PSHCE KS2 (7 minutes long approx): Same but Different – Alexandra’s story Records the views of all three siblings What is the same/different about the sisters? Why are some people different? What do you think causes people to be different/learn differently/behave differently?</p>	<p>To explore the causes of difference and free choice in how you learn/behave (eg. something inside of you?)</p>	<p>Year 5 Control Group Activity focussed on differences and empathy (evidence of diffusion – impacts measured outcomes at post testing)</p>	

Table 5.1 indicates where P4C sessions were altered from the intended intervention planning (main question/stimulus) and where fidelity to aspects of the session was insufficient, and these aspects are discussed throughout the remainder of the evaluation.

5.1.3. To what extent did the two schools and teachers implement P4C sessions and adhere to the intended Intervention guidance planning?

Participants' class teachers were asked to deliver each session, avoiding a Hawthorne effect as the children were familiar with their teacher and any changes in attitudes and behaviours would be due to the intervention rather than the introduction of an unfamiliar person. Guidance planning sessions were adapted from published (SAPERRE) 11-point lesson plans/templates and were provided to the class teachers who were experienced P4C primary school teachers and had previously delivered P4C from such templates to the relevant age groups. Guidance planning was sent to both schools prior to beginning the introduction to the study (2-3 weeks before) so that teachers could familiarize themselves with the lesson outlines. I also offered a training session to both schools' teachers by the researcher about the expectations and outcomes of the P4C experimental sessions. School 1 requested permission to adapt the planning to make the sessions more philosophical i.e. not being prescriptive with the content (format and delivery) of the guidance planning provided. This was agreed by the researcher on the condition that the overall session question and stimuli remained the same for each of the four sessions. School 2 requested the training to support and clarify session planning and learning outcomes and expectations with the researcher. The researcher was able to observe the sessions from both schools, and make field notes, which added further depth and context to the audio recordings. Anonymity was protected from the outset as during audio recorded sessions children were referred to in the session by their superhero name only (EYFS used initials in both schools). This was required

for the intervention groups and initials were used for data gathered from the control groups. By observing the sessions, the researcher was in a strong position to observe the extent of fidelity to the plan.

5.1.4. Were there any barriers to delivery of intervention sessions? To P4C or not to P4C?

In School 1, EYFS teachers originally intended to use ‘rainbow talk’, a pre-cursor to P4C which builds up children’s skills in description and discussion, as children had just begun learning skills needed for P4C (starting school September 2019) and staff felt that children would not have the skills to engage adequately with each of the sessions as planned. This was agreed with the researcher with the caveat that the main question and stimulus was still used in the sessions. However, nearer to the intervention start date, the teacher reverted to the original P4C guidance planning provided by the researcher. This change may have led to the main question being only answered in part because of the teacher questioning the children’s capability of doing P4C enquiry at this point in the year (Autumn term) and lack of time for the teacher to adequately ‘orient’ themselves to the guidance planning given how late in the proceedings the change was made. In EYFS in School 2, P4C sessions began as circle time (each child in turn responding to an initial question), which had been agreed with the researcher, again with the caveat that the main question and stimulus remained the same for each session. These sessions, particularly by session 3, eventually led to P4C-like sessions, allowing the children freedom to choose the next speaker but also to engage with and question other’s viewpoints. The earlier circle time approach may have led to reduced engagement from the children having to wait their turn to explain/challenge/discuss opinions in the session. Reluctance to engage with the intervention as a P4C session, as planned, therefore affected fidelity in the EYFS sessions in both schools.

5.1.5. P4C Session Length in EYFS groups

The time allocated by EYFS teachers in both schools was insufficient for children to develop deeper conversations within the P4C sessions. The agreed 30 minutes timeframe was reduced by the amount of time spent on warmup activities prior to the session. Breaking down the teaching time within each of the sessions indicated differences between School 1 and School 2. Table 5.2 indicates that School 1 had longer introductions and warmup activities and shorter time available to facilitate P4C enquiry than School 2. School 2 spent less time on the introduction/warm up activities and spent longer in facilitating P4C talk. As the time allocated for introduction/warm up activities in each of the sessions reduced P4C talk time, this may account for the sessions not fully building up discussion to answer the main questions in full, as indicated in Table 5.2. The reduced timeframe was also partly due to School 1 sharing their learning environment with another class (2 class cohort shared room) meaning that timeframes needed to be coordinated with the other class.

Table 5.2 Breakdown of EYFS sessions in School 1 and School 2

EYFS Sessions 30 mins agreed sessions	School 1 Session Timings	School 2 Session Timings
<p>First ‘Don’t Call Me Special’ What makes me, me? Question: What does my super-hero label say about me?</p>	<p>Total time spent: 26.23 mins Introduction: 6.57 mins P4C talk: 19.26 mins</p>	<p>Total time spent: 20.53 mins Introduction: 3.43 mins P4C talk: 17.08 mins</p>
<p>Second ‘Issac’ ‘Differences’ Question: What is it like to know someone who is different – does it matter if others think or behave differently? (perceptions of others)</p>	<p>Total time spent: 19.32 mins Introduction: 5.13 mins P4C talk: 14.19 mins</p>	<p>Total time spent: 29.58 mins Introduction: 3.53 mins P4C talk: 26.05 mins</p>
<p>Third ‘We’ll paint the octopus red’ (EYFS/Yr 2) ‘Views from our shoes’ (Yr 5) ‘Knowing and loving someone who is different’ Question: What is it like to know and love someone who is different? (stepping into anothers' shoes)</p>	<p>Total time spent: 27.7 mins Introduction: 7.54 mins P4C talk: 19.13 mins</p>	<p>Total time spent: 32.23 mins Introduction: 3.38 mins P4C talk: 28.45 mins</p>
<p>Fourth ‘Alexandra’s story’ ‘Differences from the inside or outside?’ Question: Are babies different to each other when they are born or do they become different growing up? Why are some people different? (nature or nurture). Explore causes of difference and free choice in how you behave (e.g. something inside you?)</p>	<p>Total time spent: 24.57 mins Introduction: 5.30 mins Video clip: 8 mins P4C talk: 11.5 mins</p>	<p>Total time spent: 34.11 mins Introduction: 3.40 mins Video clip: 8 mins P4C talk: 22.31 mins</p>

5.1.6. Stimulus

For session 3 the EYFS teacher in School 2 did not use the stimulus provided as they explained they had already shared two books and wanted to do something a little bit different. Instead, the session focussed on similarities and differences (an aspect within session 3, but

not the intended focus of the session) and used a video about differences and similarities, which did facilitate answering the overall question of what it would be like to know and love someone who is different. Reasons for this change were not specified by the teacher and were not discussed with the researcher in advance of the session, or afterwards. Possible reasons for this alteration may have been that the teacher had low expectations of the children's capacity to maintain attention and work within P4C sessions, particularly when looking at story books. This may have impacted the study's results.

In School 1, Year 5, Session 1 was altered by making the book (stimulus) into a power point presentation. The language for the power point was altered slightly but was not detrimental to the session design planning. Extra video clips of famous people with disabilities were also added to the session, which engaged the children positively and further encouraged discussion. The reasons for the change to stimulus was the teacher felt the stimulus (book) was too young to present to the Year 5 children and the power point and added clips gave the session 'umph'. In Session 2 a video clip was added as an extra stimulus to the existing stimulus (book). The clip depicted children explaining their perceptions of having autism which unfortunately led to some children in the classroom laughing whilst watching, and also in later P4C discussion/debate, led the children to wrongly diagnose their classmates based on the behaviours seen in the clip. The clip was played first and then the planned stimulus (Isaac and His Awesome Asperger's Super Powers) was introduced in a slightly negative, biased way as a book for younger children, potentially undermining the intended positive design of the session. The design feature of this session was to positively think about differences, compare themselves to one another and then to the character in the book, potentially sharing the same differences with the character in the text. The addition of the clip had not been agreed with the researcher and may have affected the study's results, as perceptions provided by the book were intended to be a positive depiction

of a young person with autism and the clip shown highlighted some negative responses from the children in the classroom (laughing about behaviours seen). However, the session's final thoughts highlighted that the clip had supported the children in engaging in and debating this sensitive issue, clarifying their understanding about differences such as autism and dyslexia and ending positively. Similar problems were not experienced by Year 2 or EYFS in this school.

The same Year 5 teacher also suggested altering the third P4C session's stimulus, by adding extra video clips of people with disabilities other than cerebral palsy. The researcher requested that the stimulus remain as planned so not to detract from the intended outcome of the session and so, on this occasion, it was not altered.

Due to other school teaching commitments the Year 5 teacher requested that the job share teacher facilitated session 3. This session indicated some teacher bias around using the stimulus a book called *Views from our Shoes*. This book gave a voice to children who had siblings with a disability, outlining their thoughts and feelings. The carefully chosen narrative for the third session was from a girl called Anne Meade, aged 14, about her experiences (thoughts, feelings) of growing up with her brother who had cerebral palsy. Prior to the P4C session the teacher was asked to read from the glossary at the back of the book which explained what cerebral palsy was. The narrative (one page) was introduced in the P4C session as a 'story' from a book that was 'written many years ago' and was not introduced as an important reflection of a child's voice. The only word children were not familiar with was the term 'diaper', an American word for nappy. This was explained to the children during the reading of the narrative. It is possible that teacher practices/assumptions (concern and worry about the stimulus' intended outcomes and possible negative interactions from children with SEND within the class) may have limited the discussion in the session and

potentially impacted the development of the children's empathy and understanding of the intended session outcome. These difficulties were not experienced by Year 5, School 2.

5.1.7. Recording sessions

In both schools, using two audio recording devices was required in sessions due to a large volume of background noise and quiet voices, which limited hearing children's voices in the discussions and therefore difficulty in transcription. However, even with two recording devices some voices were missed, meaning that some valuable insights may have been lost.

5.1.8. Children Engaging in P4C sessions

Within P4C sessions, children are encouraged to engage, but are not required to do so. Some sessions indicated the same children facilitating discussion so teachers, particularly in Year 2 and Year 5 encouraged children who had not spoken to do so. Some EYFS and Year 2 children's responses were difficult to record as those who were shy or not as confident to speak within a group used quieter voices. EYFS teachers, in some instances, limited children's speaking time/responses to 5 children due to the reduction in time allotted for the sessions, which reduced some children's input to the sessions (School 1) and also by initially using a circle time format which reduced the opportunities to respond to others by 'bouncing' ideas across the circle, rather than going round the circle for each child to respond (School 2).

Observation field notes indicated that children appeared to be engaged still but the timeframe allocated (after warmup activities) didn't allow for full discussion to take place and in some instances, children wanted to continue talking.

Reflecting on field notes for School 2, EYFS, I noted that the EYFS teacher was amazed at the length of time the children sat to watch the video of Alexandra's Story. They commented to the children how well they had focussed on the video, which included the one

or two children with differences. This particular comment indicates that the stimuli for the session was pitched correctly and engaged the children from the start of the session.

5.1.9. Control group activity

Control groups in both schools were asked to cover a topic which focussed on a totally different theme/concept to the Intervention group. However, it was noted that School 1 had completed one P4C session which focussed on differences and empathy during the last week of the intervention i.e. immediately prior to post-intervention testing.

Table 5.2 Comparison of Year 5 Control and Intervention Group Differences – School 1 and School 2

Year 5 Outcomes	School 1			School 2			School 2			School 2		
	Pre Control	Post Control	Difference	Pre Intervention	Post Intervention	Difference	Pre Control	Post Control	Difference	Pre Intervention	Post Intervention	Difference
Affective Zag	10.36 (6.65)	9.09 (7.81)	0.46 (-1.16)	7 (4.77)	7 (4.32)	- (0.45)	11.37 (2.66)	10.44 (5.51)	0.93 (-2.85)	8.44 (5.54)	7.66 (6.61)	0.78 (-1.07)
Affective Zig	14 (5.87)	14.36 (6.13)	-0.36 (-0.26)	17.33 (5.46)	15.88 (3.28)	1.45 (2.18)	14.75 (4.55)	13.33 (3.90)	1.42 (0.65)	13.44 (7.05)	15 (6.12)	-1.56 (0.93)
Behaviour Zag	10.18 (4.44)	9.90 (4.57)	0.28 (-0.13)	6.44 (2.81)	6.83 (3.65)	-0.30 (-0.84)	9.37 (2.61)	8.44 (3.04)	0.93 (-0.43)	7.66 (3.31)	9.11 (5.10)	-1.45 (-1.79)
Behaviour Zig	13.22 (3.97)	12.45 (5.12)	0.77 (-1.15)	14.44 (5.81)	12.88 (4.07)	1.56 (1.74)	10.75 (3.45)	8.88 (4.10)	1.87 (-0.65)	13.55 (7.10)	13.66 (7.01)	-0.11 (0.09)
Cognitive Zag	27.09 (4.01)	22.45 (4.13)	4.64 (-0.12)	23.16 (3.12)	24 (5.00)	-0.84 (-1.88)	26.5 (4.98)	23.55 (4.47)	2.95 (0.51)	22.77 (4.23)	24.11 (6.21)	-1.34 (-1.98)
Cognitive Zig	24.27 (4.31)	26 (5.27)	-1.73 (-0.96)	26 (5.12)	25.94 (4.09)	0.06 (1.03)	26.62 (4.24)	23.66 (4.73)	2.96 (-0.49)	25.66 (5.02)	28.11 (7.78)	-2.45 (-2.76)

Standard deviation (sd) in brackets, Red indicates where control group difference is higher than intervention group, Green indicates where intervention group difference is higher than control group

Table 5.3 indicates the gap between the experimental and control groups were narrower in school 1 than school 2. School 1's control group differences (highlighted red) showing an increase in post-intervention scoring, in Affective, Behaviour and Cognitive aspects of attitudes, compared to the Intervention group at post testing. School 2 indicates the opposite with an increase in positive scores for the intervention groups at post-intervention testing. This suggests that lower fidelity to the protocol in School 1, and

perhaps particularly the control group activity focused on difference and empathy, may have affected findings. However, it should also be noted that there are many variables which could affect the control group outcome data, for example, test re-test – children remembering the questions from pre-test, time and individual experiences. During final week of the Intervention the Year 5 control group (School 1) mentioned their P4C session on social media, which was also focussed on difference and empathy, a very similar concept to the final intervention session. This represents a significant breach of fidelity to the study's aims and plan and has to be considered in the interpretation of findings.

5.1.10. What were the teachers' perceptions of the Intervention?

Teachers were asked to complete an anonymised questionnaire regarding their thoughts about what worked well and what didn't work so well in the intervention. Three out of the six intervention teachers responded:

When asked what teachers liked about the intervention, teachers were positive about the 'focus' (School 2) of the intervention and commented that 'it raised some interesting discussion about disability' (School 1) and 'I felt the topic being covered was a very good topic for all children across the ages' (School 1).

Teachers were also asked to comment on anything they did not like about the intervention. Two out of the three teachers who responded to this question explained that as children did not generate the questions themselves, the sessions did not feel like P4C and 'there was a clear agenda to some sessions of what was to be taught' (School 1). One teacher thought the stimulus used was too abstract for the children to understand which was 'not central to the children's lives' (School 1) but didn't specify which one.

Teachers were also asked to comment on any unintended impacts or consequences from the P4C sessions, either positively or negatively. One teacher explained that the

children were able to discuss disability and ‘were reflective on their ideas. Some pupils were very honest about their own disabilities’ (School 1). It was noted by one teacher that:

There were some very adult conversations within my class, and it was lovely to see some of the quieter pupils with siblings who have a disability come out of their shell and discuss their views and experiences more freely’ (School 2).

The teachers expressed mixed feelings about facilitating discussion around the topic of how young children perceive and tolerate learning and behaviour differences. Two teachers explained their thoughts about how the stimulus impacted the intervention explaining ‘it was okay but sometimes the stimulus was aimed at very young children’ (School 1). Another teacher explained:

Covering the topic itself was absolutly [sic] fine and something we talk about often however as discussed above I felt the stimuli were not age appropriate or right for the children (School 1).

One teacher was more positive explaining:

The children were able to verbalise how important they thought it was to treat everyone the same and welcome diversity. They were also starting to identify how differences could make some things easier / harder for children and adults (School 2).

Explaining how teachers thought the children found the intervention were mostly positive, enjoying the sessions (School 2) and broadening their concepts of disability (School 1) and creating ‘a better understanding and tolerance of difference in the class’s (School 1). One negative viewpoint explained that although the children enjoyed the sessions ‘they did not understand the stimuli; they could not interact with the session how they normally would’

(School 1). Teachers' responses did not explain what the children did not understand about the stimulus or whether the children did not understand multiple stimuli, so this particular perspective highlights a possible tension between the children not understanding the stimulus and it being too young.

When asked if teachers felt the intervention sessions would make a difference to the children's thinking there were two positive comments and one negative one. The two positive responses indicated that intervention 'challenged their stereotypical ideas of what disability is and [sic] what people with a disability can achieve' (School 1). The second positive viewpoint indicated that the intervention offered the opportunity for some children to share 'their own personal experiences outside of school with their peers made them more aware of each other's different circumstances and more aware that there is disability all around us in different formats and how important it is to celebrate each other's achievements' (School 2). The negative response did not comment on the reasons for the response.

Finally, the teachers were asked if they would like to make further comments about the study. One teacher responded explaining 'I really enjoyed taking part in the project' (School 2).

Anecdotal notes written by the researcher indicated differences from the outset for School 1 and School 2. Initially School 1 leaders (Head teacher, SENCO and Assistant Head) consented for the school to participate in the study – requiring the intervention and control group teachers to complete participation forms. It is not understood if the decision to take part was directed by the school Senior Leadership Team or a collective decision made by the teachers, but it is possible that participation was, to some extent, imposed on teachers. By contrast, School 2's P4C lead, after an initial meeting with the researcher about the study, held a meeting with the potential intervention and control group teachers to gain their

perspectives on taking part in the study. This seemed a way of ‘sharing a common purpose’ and bringing staff together.

5.1.11. What were the children’s perceptions of the intervention materials?

Children’s comments and perceptions were captured from researcher observations and field notes, and these highlighted the children’s perceptions of the materials used.

5.1.12. Differentiated Books

The differentiated books in EYFS were received positively as children wanted to read and engage with them independently. The books were designed to support independent reading, one sentence per page, depicted learning and behaviour differences of two characters. Each page highlighted what ‘happened’ each day at school. Children indicated that they understood the differences between Zig (learning differences) and Zag (behaviour differences) even though not explicitly told about differences. One child explained “oh that one’s naughty/I like that one!” (pointing to Zig). A Year 2 child commented after reading the books about Zig and Zag “we are all unique”. Books for Year 2 were also differentiated with each page describing what happened each day at school in more depth, but accessible to Year 2 readers.

5.1.13. Comic Strips

Children commented that they found the comic strips interesting and fun to read, asking me if they had been home-made “did you do this R?” R = yes (nods and smiles) “Cool!” (Female, Year 5). Differences between Zig (learning differences) and Zag (behaviour differences) were immediately understood by the year 5 children, without being explicitly explained, one child commented “I feel sorry for Zig... it can’t help it!” (Male, Year 5).

5.1.14. Parental Comments

The researcher, whilst travelling to the school, saw one parent and child waiting outside of the school and was recognised by a child in EYFS. The parent commented that they were really impressed at what their child had explained to them about really enjoying the introduction of the characters and subsequent questions, which they could explain in great detail to the parent.

5.1.15. What light can session observations shed on the study's findings?

Field notes taken during the intervention sessions indicated the positive impact of the intervention sessions particularly around differences such as Down Syndrome. A discussion with the P4C teacher highlighted the difficulties around teaching about differences. The teacher explained that many of the children in the class have an awareness of others with visible signs of differences – but they still laugh and react when they observe a child's atypical behaviours. The teacher was concerned how one particular child in the class might feel/react to the book 'We'll paint the octopus red' in session 3, as their sibling had Down Syndrome, and the video clip of Alexandra's story in session 4. The teacher was pleased to explain that the third and last P4C sessions had been very positive for that child. After discussion with the teacher this child had explained, they had enjoyed reading about and seeing someone else with Down Syndrome (after watching BBC clip Alexandra's story) and felt very positive about the clip showing Alexandra being good at "things" and that made them feel happy.

Field notes also indicated the positive impact of using the video clip 'Alexandra's story' in a Year 5 class to dispel the negative perceptions of someone with differences. A

child was heard to say whilst the video showed Alexandra taking part in swimming lessons saying, “OMG she’s good!”

5.1.16. Conclusions

Fidelity in implementation of the intervention in both schools was varied, in timing of sessions and using guidance planning to answer the overriding question. This may have impacted findings.

Teachers reported positive attitudes towards the focus of the intervention but expressed negative views towards some of the stimuli provided.

Anecdotal /researcher observation of P4C sessions and testing indicated children had a positive reaction to the puppet characters and stimuli and appeared to enjoy the theme of the P4C sessions.

This was a small-scale trial in terms of number of schools and pupils involved. The time scale adopted was two academic terms into a school year. School 1 intervention timescale was a four-week intervention during Autumn 2019, followed by immediate post testing in Autumn term and 12 weeks later delayed post testing (completed in Spring term 2020). School 2 intervention timeframe was a four-week intervention during Spring 2020, followed by immediate post testing in Spring 2020 and scheduled delayed post testing in Summer 2020 (which was not undertaken because of COVID 19). Timeframe for EYFS intervention (Autumn 2019 was not enough time for EYFS children, who were just starting their P4C journey, to develop the required skills.

In scaling up this pilot intervention (efficacy trial) differences between schools in fidelity to the main question and stimulus indicate that this intervention would need careful

monitoring of fidelity and implementation. This may not be possible with a larger cluster design (effectiveness trial).

There is a need to introduce a 'usual practice' survey for control groups at the beginning and end of the study – to gain a deeper understanding of what control groups had been doing prior to and during the study.

School perceptions/assumptions about participating in a study with a single researcher may be different to the perceptions that a larger organisation may evoke (for example EEF) – this may also affect study outcomes.

Chapter 6

6. Do children think it is important to predict learning and behaviour problems, and do they think genetic screening has a role to play in this?

6.1. Background

Adults, on average, have low levels of genetic literacy and this appears to have consequences for their beliefs about genetic influence on human behaviour and their perceptions of DNA screening (Chapman et al., 2019; Rew et al., 2010). Chapman et al. (2019) suggest that comprehending genetic information “is becoming increasingly crucial for all aspects of our lives”, including job prospects and educational attainment (Chapman et al., 2019, p.73). Improving understanding of genetics has been found to enhance health behaviours (Donovan et al., 2021) and to reduce adolescents’ false beliefs and biologically deterministic thinking in relation to social identity, culture, and race (Donovan et al., 2021). By contrast, little is known about younger children’s views or understanding regarding genetic influences on individual differences in learning and behaviour, or about a possible future in which DNA screening for such traits could be used (Asbury et al., 2021). This is problematic because any decisions that are made about genetic screening for an increased likelihood of common conditions will directly affect children. Responsible research therefore demands that their voices should be heard in discussions about the future of genetic screening (Carrier & Gartzlaff, 2020).

An understanding of children’s views can help shape policy decisions and provide insights that will benefit both science and society. Individual differences in educationally

relevant traits such as cognitive ability, academic attainment and self-regulation are partly explained by genetic differences between individuals (Polderman et al., 2015). International teams have begun to identify genetic variants of small effect that correlate with behavioural traits, such as years of education and cognitive ability, and to combine them in genomewide polygenic scores (GPS) that explain small to moderate proportions of variance (Lee et al., 2018). Commercial companies have begun to use GPSs for screening purposes, albeit prematurely (Munday & Savulescu, 2021; Turley et al., 2021; Lázaro-Muñoz et al., 2021). Some researchers have argued that there is potential for GPSs to be used within education, in conjunction with other assessment tools, to identify risk of learning difficulties (Asbury & Plomin, 2013; Shero et al., 2021) and mental ill health (Meyer, 2020), although this remains contentious (Asbury et al., 2021). It seems highly likely that GPSs will become increasingly available, but there are risks associated with this when society is not sufficiently prepared to understand the implications of using them, including their limits, and to put the necessary safeguards in place (Plomin & von Stumm, 2018).

It is important to know what children think about genetics because they are key stakeholders in discussions about DNA-based prediction of learning and behaviour differences. It is also important, in this context, to understand children's views of those they perceive as different to themselves. This can enhance current understanding of the risks of stigma, self-stigma and detrimental expectancy effects that may be associated with DNA screening for probable risk of experiencing learning and behaviour differences (Shifrer, 2013).

To date, little is known about how children view learning and behaviour differences (Beckett, 2014; Cairns & McClatchey, 2013). The same is also true for research into how young children develop genetic literacy (Meyer et al., 2020). However, there is a relevant

body of literature regarding how and when children form essentialist and deterministic perspectives about difference, sameness, and inclusion. The available literature suggests that neurotypical children tend to view those with learning and behaviour differences as not being able to do anything (Beckett, 2014) and to categorize those without differences as 'normal' and those with differences as 'abnormal' (Beckett, 2014). These categorisations have been found to be perpetuated through the media (Samsel & Perepa, 2013). Children appear to make a distinction between 'kids like me' and 'kids like them', showing a clear preference for homophily (Schwab, 2018, p.9).

We also know that children develop essentialist thinking, the belief that categories share certain attributes) that cannot be seen (e.g. tigers are fierce), very early in childhood (from the age of 2 years) (Gelman, 2004). They begin to search for hidden, nonobvious, and fixed attributes such as fierceness in a wide range of categories (Gelman, 2004; Gelman et al., 1998; Heyman & Gelman, 2000). By the age of 4-5 years children have been shown to perceive category membership (e.g. being a tiger) as stable and causal (e.g. tigers are always fierce) (Gelman, 2004). Children's thinking at 2 years show they are able to make simple inferences from new information about a category and try to generalise that fact to other category members. By the age of 4-5 years children's thinking becomes more sophisticated and stable as they decide whether or not they generalise from individual observations to whole categories in particular cases (Gelman, 2004, p. 405).

Baldwin et al. (1993) have argued that such psychological essentialism happens even earlier than the age of 2 years. Baldwin et al. suggested that children from the age of 9 months, and being shown once, can make 'simple inferences about nonobvious object properties' (Baldwin et al., 1993, p. 711). Gelman et al. (1998) suggest that children are not taught how to categorize by their parents, making the argument that this behaviour is innate,

but they do acknowledge that the language used by parents when describing objects or animals, and indeed the language not used, may support children's assumptions about categories (e.g. fierce tigers in pretend play interactions). The development of essentialist thinking could certainly be seen as important to the development of children's social attitudes towards those who look, learn, or behave differently from themselves as this too involves defining or acknowledging categories and their defining characteristics (Prentice & Miller, 2007).

Psychological essentialism has commonalities with other psychological biases such as correspondence bias (Gilbert & Malone, 1995), beliefs about the self (Dweck & Leggett, 1998) and that social groups share coherence and unity (Campbell, 1958). They all share the perspective of 'people perceiving and understanding others in terms of an invisible stable essence' (Dar-Nimrod & Heine, 2011, p. 2). Genetic essentialism refers to the assumption that human traits and attributes are established from a genetic make-up which is 'immutable and determined' (Dar-Nimrod & Heine 2011, p. 4). One risk of perceiving genetic effects to be immutable, combined with psychological essentialism, is that this perspective may lead to particular groups being viewed as permanently similar or distinct, with members of that group (e.g. children with learning or behaviour difficulties), like tigers, having the same "genetic essence" (Dar-Nimrod & Heine 2011, p. 4). However, it is interesting to note the finding that children aged between 3 and 4 years of age show no preference for kin over friendship group when sharing (Kinzler et al., 2010) suggesting that the 'kin' category is not stable at this stage. It does appear to be emerging though, as 3 year olds prefer to share with kin over children they do not know (Kinzler et al., 2010). By the age of 5 children reliably differentiate between kin, friends, and strangers, suggesting that this is a gradual developmental stage that continues through the early years of childhood (Kinzler et al., 2019;

Spokes & Spelke, 2016). The development of this distinction is argued to exist because of increasing socialisation as children start school (Spokes & Spelke, 2016).

Therefore, it seems that children's capacities for category formation stabilise by 5 years of age and their kinship development runs roughly in parallel. This knowledge suggests a window of opportunity – in the earliest years of schooling - for opening up constructive discussions about differences in order to work towards changing incorrect but stable beliefs and developing positive and accepting relationships. This is worth doing early because we also know that children have the capacity to question and change their perceptions through interventions that discuss and challenge perceived differences (Gus, 2000; Beckett, 2014; McGill, 2019). This indicates the potential importance of educating young children about learning and behaviour differences and their aetiology (Cairns & McClatchey, 2013; Black-Hawkins et al., 2021) in age-appropriate ways from the start of school.

By eliciting and amplifying children's voices on these important topics – diversity and genetic prediction - educational practitioners can provide a vital platform for children to be heard (Wall, 2017) and mediate between educational policy and children's perspectives (Murray, 2019). The use of innovative methodologies such as Philosophy for Children (P4C) and age-appropriate data collection tools (Lees et al., 2017) and resources such as puppets (Dunst, 2014) – as used in the current study - could be useful tools in the development of this important platform.

6.2. Methods

6.2.1. Participants and Measures

Participants are described in full in Chapter 3, section 3.4. The vignettes and questions on which the current analysis is based are also fully described in Chapter 3, section 3.6.8.

6.2.2. Coding and Analysis

An inductive, exploratory content analysis (Bengtsson, 2016) was chosen because the dataset was made up of a large number of relatively short statements from the children. Initially the full dataset was read several times and then broken down into the smallest meaning units possible without losing meaning, a process known as “decontextualization” (Bengtsson, 2016, p. 11). The meaning units were then coded by labelling each with one or more codes. Coded data was then checked against the original data to check that all text with meaning had been coded i.e. recontextualised (Bengtsson, 2016). After recontextualising the data, codes were combined into categories. Coding was manifest rather than latent, focusing on what participants said rather than trying to identify hidden meanings. A codebook of 38 codes was developed and used to train a second researcher who independently coded 20% of the data in order to assess the reliability of the coding. Children ($n = 128$) reported a response to each of the four questions ($n = 640$ responses) and every fifth response ($n = 128$) was coded by the second researcher. We tested for intercoder reliability using Cohen’s Kappa and the results of this analysis are shown in Table 6.1.

Table 6.1 *Intercoder reliability*

CODE	Cohen's Kappa	Frequency	Confidence Intervals
1	1.00	6	1
2	*	0	*
3	*	4	*
4	1.00	11	1
5	*	1	*
6	*	4	*
7	1.00	10	1
8	*	3	*
9	1.00	8	1
10	*	1	*
11	1.00	7	1
12	1.00	14	1
13	1.00	24	1
14	1.00	33	1
15	1.00	6	1
16	1.00	19	1
17	*	4	*
18	1.00	14	1
19	1.00	13	1
20	1.00	2	1
21	1.00	35	1
22	*	6	*
23	1.00	3	1
24	1.00	3	1
25	1.00	3	1
26	1.00	45	1
27	1.00	15	1
28	*	2	*
29	1.00	3	1
30	1.00	8	1
31	1.00	2	1
32	1.00	15	1
33	0.13	27	-0.24 to 0.03
34	*	1	*
35	*	1	*
36	1.00	41	1
37	1.00	201	1
38	*	1	*

*Kappa was not calculated because the code was not used in the reliability checking sample of n = 128 responses.

Cohen's Kappa measures the level of agreement between raters, with 0 indicating no agreement and 1 indicating perfect agreement. Syed and Nelson (2015) suggest the following levels of agreement: $k = 0.01-0.20$ none to slight; $0.21-0.40$ fair; $0.41-0.60$ moderate; $0.61-0.80$ substantial; and $0.81-1.00$ almost perfect agreement. In this study the initial average kappa = 0.75 agreement. We found almost perfect agreement from the outset

for 16 out of the 26 codes, but only slight to fair agreement for the other 9 codes.

Discrepancies were addressed by discussion between the two coders which led to some changes as shared understanding was achieved. After these changes, average kappa = 0.93 agreement, with near perfect agreement for 25 out of the 26 codes. There was still only slight agreement for Code 33 - Ld/bd viewed stereotypically (negatively), even after discussion, and so it was excluded from the analysis.

6.3. Results and Discussion

Table 6.2 shows the six categories derived from content analysis to answer the research question. The codes making up each category are listed, along with a brief description (of the category) and example quotations.

Table 6.2 Categories derived, with associated codes

Category	Codes	Example quotation
Worried about being – and being seen as - different	Not worried - you'll get help for learning and behaviour differences	'Because people look after them'
	Blame for learning/behaviour needs Worried about coping with learning/ behaviour differences	'Because he might get told off... go in by their own with the baby... cos they don't know what do because they are worried' 'Because they would be worried about Zeggy's education and how he would act at school'
	Worried about bullying	'Because someone might bully her at school', 'because she might get bullied at the park'
	Ld/Bd viewed stereotypically (negatively)	'erm sometimes they might be a bit naughty', 'because they aren't really good friends'
	Differences reduce life chances	'Because if he can't learn then he will never get anywhere in life', 'they're worried he might do the things very wrong'
Beliefs about the Origins of Learning and Behaviour	Behaviour is learnt	'Because he might make really good friends and they might help him behave properly and learn properly', 'If the baby was like zag they could do something better than zags parents and raise a better child'
	Behaviour can be self-controlled	'You could be able to control everything and you don't get any problems when you're sad or angry'
	Viewed as vaccine/protection	'Because he might get a bit poorly if he didn't, so it keeps them healthy', 'Because they don't won't [sic] to go in the hospital'
	Genetic determinism	'Yes, because the gens [sic] will go in the baby'
Testing is harmful	Doctors are careful	'Cos er.. he might be a little bit erm... it might be a little bit tickle... but that ... when it tickles it makes me laugh! Cos it's kinda good cos the doctor is really really careful to you!'
	No say - it's unfair	'Because she might not like it.... What the doctors going to do', 'No because they might already have signed in and they won't let them cancel it'
	Testing dangerous - physically	'It might be dangerous – what if they didn't test it on someone else because it might damage her brain because you don't know what it is'

	Testing dangerous - mentally	'Because if they don't like... everyday they will be hurt', 'because it can impact their life up until birth because they would worry and be unsettled'
	Rude	'Because it's rude.... I don't know'
Testing could help	Viewed as illness, needs curing	'Because they want their baby to be helfy [sic]'
	Parents obliged to test	B'ecause [sic] they have to make their baby has to go there to listen', 'It is their decision'
	Hospitals will help	'Yes, maybe make me in hospital'
	Allows for implementation of support	'because it might help Zeggy', 'so you can help him', 'no because they should give him/her a chance and if he/she has trouble they should teach him/her', 'they could not make it go away but they can help you with your learning', 'because sometimes jeans [sic] pass on and sometimes they don't'
	Learning is key to getting on in life	'She needs to learn more and be smart enough because when she's big she's going to go to college and after college she might be having driving lessons'
	Testing is helpful	'Because it is good for Zeggy and it does not hurt a bit'
	Testing in itself will make life/learning/behaviour better	'It'll help me learn and it will help me be clever!', 'so that actually make others happy by not being naughty any more...'
	Prefers low tech strategies after testing	'Their mum and dad could help you if you can't talk and walk and eat or sleep properly', 'my family could do something... maybe if they give him a fidget toy when he is learning that might help him a little and calm him down when he is behaving in bad w [sic]', 'some people have autism and the school give them ear defenders to cope with how loud it is and the school also bought and fitted a lift because there Is a boy in year six and he is disabled'
How soon is too soon for testing?	Find out when you are ready to know – wait until school	'It wouldn't understand and it would find out it was about when it was younger', 'Why take a test if you can find out on your own'
	Worry when we're older and going to school	'But if it was a new born I would get the bay [sic] tested as it is a baby and they shouldn't be jumping to conclusions', 'They shouldn't hurt her and find out when she goes to school'
	Too Late	'Because they're not babies anymore'
What's the point?	Loved anyway	'Even if Zeggy grows up to have learning disabilities Zig/Zag and Zog won't love him/her any less', 'I like the way he is and I love him'
	It's not that bad!	'Something more worrying might happen to other people', 'yes because they wanted him to be here'

Testing is only for ill people	'Because he's not poorly'
Children might be different to parents	'Because i think that Zeggy will be different to Zig and zag'
Testing cannot predict behaviour	'Because they might grow up to be a good boy or a little girl. There is a chance that the test could be wrong and that just worries me more'
You will learn anyway	'Because the shape can learn and then it can go back to school because he will learn', 'Because she learns things'
Tools or medicine might not be available	'No, because you can't do anything about it because they might not have the medicine to make them better'
What's the point? Creates worry	'There is no point taking a test. All it is going to do is worry you. If you had a test and it told you you [sic] had learning disabilities you would be worried. Why bother putting a label on it when you can find that out for yourself'
Schools cannot help you	'Being loving... no because my school doesn't do that... and I've started this school....', 'Er... learning... it's cos they can't help you at school... it's cos they can't...', 'No because it will be tricky to learn'
Child See Pros and Cons	'because if he had the test he might get nightmares about the doctors if he once kneaded to go to the doctors for an emergency he might be scared to go and refuse to go But if he had it done you might get a benefit of knowing if he had learning difficulties and having him get extra help'

The frequencies for the agreed codes are shown in Table 6.3 and are discussed in the context of each category, apart from ‘don’t know’. This was a very frequent code ($n = 205$) used when children were unable to articulate or did not want to explain their reasons for choices made.

Table 6.3 *Frequencies for codes*

Category	Code	Frequency
Worried	Not worried about learning or behaviour differences - you'll get help	10
	Blame for learning/behaviour needs	3
	Worried about coping with learning or behaviour differences	8
	Worried about bullying	2
	Ld/bd viewed stereotypically (negatively)	29
	Differences reduce your life chances	1
Origins	Behaviour is learned	11
	Behaviour can be self-controlled	1
	Viewed as vaccine/protection	13
	Genetic determinism	17
T Harmful	Doctors are careful	7
	No say - it's unfair	4
	Testing dangerous - physically	45
	Testing dangerous - mentally	15
	Rude	1
T Helpful	Viewed as illness, needs curing	10
	Parents obliged to test	8
	Hospitals will help	1
	Allows for implementation of support	33
	Learning is key to getting on in life	6
	Testing is helpful	19
	Testing in itself will make life/learning/behaviour better	15
	Prefers low tech strategies after testing	35
How soon?	Find out when you are ready to know - wait until school	6
	Worry when we're older and going to school	4
	Too Late	1
Point?	Loved anyway	14
	It's not that bad!	24
	Testing is only for ill people	2
	Children might be different to parents	6
	Testing cannot predict behaviour	3
	You will learn anyway	3
	Tools or medicine might not be available	3
	What's the point? Creates worry	3
	Schools cannot help you	41
	Child see pros and cons	7
-	Not Coded	28
-	Financial cost of testing	1
-	Don't know/no response	205

Table 6.4 Breakdown of category frequencies per year group (based on how often one or more codes within each category were applied to data from children in each year group). Number of 'don't know' or 'no response' codes are also presented.

Category	EYFS Frequency	Year 2 Frequency	Year 5 Frequency	Total Frequency
Worried	22	15	16	53
Origins	8	18	16	42
Testing Harmful	32	27	13	72
Testing Helpful	32	44	51	127
How soon?	2	3	6	11
Point?	51	28	27	106
Don't Know/no response	90	84	31	205

The frequencies for each category have been broken down into year group responses in Table 6.4. The frequency of the Don't know/no response code suggests that EYFS children responded with don't know or made no response ($n = 90$) slightly more readily than Year 2 children ($n = 84$) and noticeably more readily than Year 5 children ($n = 31$). This could arguably be because children were unable to respond to the questions due to their language or comprehension ability, and therefore gave 'don't know' answers, but also because they may be applying their "right not to speak, which must be respected" (Kirby, 2020, p. 821), particularly in the case of EYFS children who were interviewed on a 1-1 basis. For these children the dynamics of an adult-child power relationships could have led them to not want to offend or disappoint the adult with their answers (Kirby, 2020). It could also be the case that the questions evoked a negative feeling – which the children may not have wanted to address (Courchesne et al., 2021). However, it is important to note that children were presented with a pictorial consent/assent sheet (Chapter 3, Materials) which explained that they could stop at any time; move on to another question; or withdraw from the research with no consequences. Our novel method (Courchesne et al., 2021) may also have

contributed to the amount of children making a choice not to answer questions (by leaving written answers blank in the case of Year 2 and Year 5).

6.3.1. Category 1: Worried about being – and being seen as – different

This category is about children's perceptions of being - or being seen as – different. Table 6.4 indicates that children aged 4-5 years provided slightly more responses regarding being worried ($n = 22$) than children aged 6-7 years and 9-10 years ($n = 15$ and $n = 16$ respectively) although the difference was not particularly marked.

Children suggested Zag and Zog (as parents) should be worried about baby Zeggy being born with behaviour differences because “sometimes they might be a bit naughty” (CB) and so they might be ‘worried he might do the things very wrong’ (AH). They also suggested being born with behaviour differences would affect how Zeggy might react to situations such as becoming “so horrible and nasty to each other.... because that’s what me and my sister do when we are in trouble” (LB). They worried about outbursts of aggressive behaviour, questioning “what if the baby smacks or punches somebody?” (TTU). One child suggested someone with behaviour differences may not be trustworthy “because they could be fibbing” (Galaxy Girl). Some children indicated that children with behaviour differences “aren’t really good friends” (PC) and “they are really annoying!” (FB). In summary, they expressed a wide range of negative views about behaviour differences.

Children also voiced concern about being born with learning differences “because they might not know how do to a lot of stuff” (Batman) and “cos they don't know what to do” (FG). Children feared having learning or behaviour differences would affect life and self-help skills “because they might need help - it might not know how to get dressed or brush his teeth” (Sooper Happie). Worry was also expressed by the children about having tangible symptoms of difference, for example being unable to read and write well, and showing impatience and expressing themselves physically, perceiving that those children with

differences were more likely to be intimidated and bullied, explaining that Zeggy would get “bullied at the park” (Brave Rose) and that “someone might bully her at school” (Sparkly Reenie).

One child was concerned with being blamed for being born with learning or behaviour differences “because he might get told off” (HR). Fundamentally, there was a perception it might be hard to be a child with learning differences and it might be hard to be around a child with behaviour differences.

However, it was felt by some children that even if you are different and need extra help it could be worrying but it would be okay because you could get help:

I think my family would be able to help because they could help you by treating you. And school because they could treat you good as well and give you toys to fiddle with and help you concentrate and learn more stuff for when you grow up (Secret Spy).

Overall, the data in this category indicated a substantial proportion of children in the sample expressed worry and concern about being – or being seen – as different; and had mainly negative views of what life is like for children with learning or behaviour differences. Negative perceptions focused mainly on difficulties in being able to form friendships, the perceptions held by teachers, the potential for being bullied and difficulties with learning and everyday tasks.

6.3.2. Category 2: Beliefs about the origins of learning and behaviours

This category focuses on the children’s perceptions of the causes of learning and behaviour differences (both genetic and environmental). We found some children believe learning and behaviour differences will inevitably be transmitted from parent to child, while others believe they can be altered by parents, family and peers. Overall, there were 42 responses related to the causes of learning and behaviour differences. There were 8

responses from 4-5 year olds, 18 from 6-7 year olds and 16 from 9-10 year olds, suggesting that 4-5 year olds may not have been quite ready to engage in this way

The 9-10 year old children seemed particularly convinced of the inevitability of Zeggy having learning or behaviour differences because Zig/Zag did, suggesting a belief in genetic determinism, and explaining it would definitely be the case “because there [sic] genes are the same” (OG), “the gens [sic] will go in the baby” (Dance Drama) and a more moderate view that “Zeggy might have problems because their parents did” (Awesome Artist). Secret Spy explained further, “Zeggy could act like Zag and be very nasty or he could be like Zig and can’t read and needs lots of help”. Children also made comparisons between Zig, Zag and Zeggy’s learning as “Zeggy might find it tricky because Zig and Zag did” (Super Writer).

Children suggested, after reading the resources about Zig (learning differences) and Zag’s (behaviour differences) characteristics, that they would expect to see the same learning and behaviour differences in any children “because Zig/Zag are clumsy and talk like babys [sic]. So Zeggy will do that to [sic]” (EB). Children saw this as inevitable and made the case that Zeggy would not be able to learn and that this has a long-term impact “if he can’t learn then he will never get anywhere in life” (Mathematical Man). They expressed negative beliefs and assumptions about learning and behaviour differences as well as genetically deterministic views.

However, some children also made environmentally deterministic assumptions and blamed parents for poor behaviour in their children. For example, Mrs Brave suggested Zeggy would behave badly “because they don’t behave either”, and parents should be worried “because they don’t want it to be like them” (Bob the Brilliant Braille Boy). As TR explains: “Sometimes babies learn from their parents and do it themselves and that can be worrying”. This suggests some children believed learning and behaviour differences are copied from parents and if parents have learning or behaviour differences then this is

worrying because Zeggy will resemble Zig/Zag because they are bringing him/her up, as well as because they are genetically related. In this vein, CB2 indicated good parenting could change behaviour “if the baby was like Zag they could do something better than zags [sic] parents and raise a better child”. HH explains that changes in behaviour could be made by friends and school helping:

you shouldn't worry because he might make really good friends and they might help him behave properly and learn properly and you could help him to [sic], or he might have a really amazing teacher that will help him so just don't worry. If he was like Zag, then he might be able to help himself and behave properly.

Learning and behaviour differences were also likened by some children to illnesses which could be cured. FM suggested “he's poorly.... Like my leg!”. Sparkly Reenie explained: “just in case there's a problem when she gets pain and sometimes she needs a test to see if her blood works properly” and AT said “they might be able to save it!”.

In summary, some participants believed that genes are destiny, and a parent who struggles will inevitably have a child who struggles, while others adopted a more blank slatist position, believing child development is governed by environmental factors such as parenting, friendships and school and therefore positive environments were all that was needed to address any ‘negative’ learning or behaviour differences. There was clear evidence of essentialist thinking in both directions, indicating that children formed “causal explanations” (Gelman, 2004, p. 404) for differences.

6.3.3. Category 3: Testing is harmful

This category is about children's negative perceptions of testing for an increased likelihood of learning or behaviour differences, although some children approached it by

thinking about their experiences of medical and diagnostic testing in general. For example, through visiting their own doctor or having tests for other medical reasons. Overall, 73 responses related to whether participants perceived testing to be harmful. The 4-5 and 6-7 year olds worried the most about Zeggy being hurt by the test (32 and 27 codes applied respectively) with 9-10 year olds worrying less about this (13 responses), which suggests some possible changes in understanding and/or priorities over time. Table 5.4 shows that the two most frequent codes in this category where children believe testing to be harmful physically ($n = 45$) and mentally ($n=15$).

When asked whether Zig/Zag and Zog should have Zeggy tested children expressed concern that the testing process itself would be harmful, commenting: “I don’t want any babies to cry”, (PP). As one child put it: “I’ve been to the doctors... I just had needles, but it did hurt” (JH). Children were also concerned about whether testing could physically alter someone. Dancing Flexibility Superstar wondered if “it might damage her brain because you don’t know what it is” and Suggar Rush questioned the safety of testing “it might be dangerous – what if they didn’t test it on someone else?”. Tianise explained a longer-term worry:

If he got it I think that I would cry because I don’t want him to change I like the way he his [sic] and won’t want to go there ever because sometimes things change and his face might change and not be the same as it was when he didn’t have the test.

Their concerns about physical hurt during testing were not alleviated by the introduction of the scenario stating that genetic testing “did not hurt a bit”.

As well as expressing concern for Zeggy, CB2 also suggested knowing about learning and behaviour differences through pre-natal testing could have long term mental health

effects on the parents, Zig/Zag and Zog too, as “it can affect their life up until birth because they would worry and be unsettled”.

Secret Spy explained the possible long term mental harm that testing might create particularly for autistic children and children with ADHD. There was a sense that some children believed the test would cause the disorder (or difference) and that if Zeggy wasn't tested the problem wouldn't occur.

it could hurt Zeggy and really upset him and could make him really nervous to go to school and can't make him learn and it could make them not control their behaviour.

Some children considered how testing might infringe their rights, with JD indicating that they thought testing was “rude” and AH showing concern for Zeggy's rights, suggesting unfairness as Zeggy had no say in the situation “cos she might not like it.... what the doctor's going to do”. Galaxy Girl highlighted the unfairness of how children's consent for testing is not sought and the lack of autonomy to withdraw “because they might have signed in and they won't let them cancel it”.

SL showed concern about confidentiality and everybody else finding out before them, and withholding this information about themselves “Cos what if I was so little and went to the doctors before someone told me? And they didn't tell me so...so...so... I don't think they should do it...” This was also reiterated by Elme who explained that decisions made about testing should be up to the parents of the child being tested and not anyone else.

I don't think they should get a test done as they will know what will happen in his life so it wouldn't be a surprise ... but I guess it is up to its parent not up to other people as they might have autism and it's better to be safe than sorry but also I think they should keep an eye out for the key features of Autism because you never know but If it's a new born I

think they should wait a while before jumping to conclusion on if he will be bad at school or naughty but as I said in a way it's not up to me it's up to the parent(s) of the child.

Some children however suggested because of the carefulness of doctors testing would be okay, which seems to suggest that doctors make the testing less dangerous and that it would be similar to routine undertaking routine health checks “because I like being [sic] to the dentist - it's the same” (IR).

In talking about testing children expressed a desire for baby Zeggy not to be hurt, either physically or emotionally. They were also able to engage in some sophisticated thinking around the right to know (and the right of the child not to know), and about the risks inherent in trying to predict the future for both parents and children. While Category 1 identified some very negative and deterministic views about learning and behaviour differences, children were still concerned about testing for them - primarily because of concern for Zeggy.

6.3.4. Category 4: Testing could help

This category is about children's attitudes towards testing and if they perceive it as likely to be helpful. Some children argued testing would be helpful as it would allow for implementation of extra support. Overall, 127 responses expressed the view that testing could help with identifying learning and behaviour differences, seeing this as a good thing. This suggests some children who pointed out that testing could be harmful also acknowledged ways in which it could be helpful. In this sense their views aligned well with those of a series of expert panels set up to explore a similar question (Asbury et al., 2021). The number of children expressing this viewpoint increased somewhat with age, with 32 responses from 4-5 year olds, 44 responses from 6-7 year olds and 51 responses from 9-10 year olds, the opposite pattern to that observed in Category 3. Table 5.4 frequencies also

noted that children perceived that testing would lead to support ($n = 33$), testing would be helpful ($n = 19$) and children indicating a preference for low tech strategies after testing ($n = 35$).

AO explained that knowing about learning differences would help because it could inform intervention: “people could understand how to help him” and by identifying strengths and weaknesses which could as MS put it “tell them what is the matter with him” and allow children with learning and behaviour differences “to see if they can learn a bit more” (IJ).

It was felt by some that testing would be helpful for parents and school to “get prepared” or “have a heads up” (OG). The Acro Star suggested testing “should give him/her a chance and if he/she has trouble they should teach him/her” and in turn reduce fear “they could tell us don’t worry then you wouldn’t be scared” (EB1).

Getting tested was important for Super Turtle as they questioned whether children with learning and behaviour differences had developed these “because they have germs” and Super Ellie explained testing might make learning and behaviour differences “go away”. Super Turtle’s point may also highlight a basic understanding that something inside of you may be affecting how you develop, which testing for will help. Hulk Smash suggested not going to the doctors would be detrimental “because if you don’t go to the doctors it might not go”, and this was reiterated by OH and Math Man. This betrayed a misunderstanding, equivalent to the belief that testing would cause the problem, that testing would cure it. Indeed, some of the children explicitly stated the misconception that a predictive test for learning and behaviour differences would act as a cure and described how others would benefit, as well as Zeggy, saying it would “actually make others happy by not being naughty any more” (LB).

Children put themselves into others’ shoes by explaining that being tested for learning or behaviour differences could enable a variety of low-tech strategies and support to be

provided to them. For example: small, stepped approaches in learning “I think school would help with lessons by explaining what we are doing a bit more and possibly step by step but could mainly help with that” (MM), provision of resources “they might be able to get stress toys for him and things to stop him getting distracted and get him special needs stuff” (Emma Cat Loo), and technological support “Sometimes if you’re struggling to do English right she might need to go on a computer” (Sparkly Reenie). TTU used personal experience to explain how medical intervention could provide support “well I know that a doctor can help me I am getting medicine to concentrate more. I’m get [sic]medicine to concentrate”.

Elme indicated disclosure of difficulties after testing may help with managing others’ perceptions of learning and behaviour differences:

I think the school would help as I have seen they have helped with over [sic] people and the teacher at home I think your family will help you no [sic] stop as they are there for you when you are down but some friends not be able to as they might not know and you might upset them a lot but you always need to warn your friends. Also some family you haven’t seen for a while might mess with you and you might do something wrong so also warn them I would always warn my family.

CB explained testing “would be okay to have it mmm yeah - It’ll help me learn and it will help me be clever!” This viewpoint may reflect a misconception that testing would enhance their abilities.

Dance Drama, when asked what the children themselves found difficult and if there was a test available could anyone do anything about it, explained that “they could not make it go away but they can help you with your learning”. Baller however, had mixed feelings and could see both the positives and negatives of being tested for learning or behaviour differences

because if he had the test he might get nightmares about the doctors if he once kneaded [sic] to go to the doctors for an emergency he might be scared to go and refuse to go. but if he had it done you might get a benefit of knowing if he had learning difficulties and having him get extra help.

In summary, some children perceived testing to be helpful, even some of those who also saw it as potentially harmful. In this category children explained testing would be helpful as this would allow for the identification of strengths and weaknesses and for the implementation of support.

6.3.5. Category 5: How soon is too soon for testing?

This category is about what children perceived to be the optimal timing for DNA screening for an increased likelihood of learning and behaviour differences. Very few children spontaneously considered this issue (two responses from 4-5 year olds, three responses from 6-7 year olds and six responses from 9-10 year olds) but it is interesting to consider their views because it sheds some preliminary light on when children believe they have capacity to understand, and the age and timeframe that is appropriate.

For some, the idea of testing young children was a difficult thought as babies don't know why they are being tested "because babies can't erm... they don't know..." (AB). In simple ways these children spontaneously considered the rights of baby Zeggy. Children put themselves into the shoes of a baby and explained they would be too young, "he's only little" (EB1).

Waiting until you're older to test was a view shared by AM1 who explained parents "can worry about that when their baby is older". This viewpoint was also expressed by FH explaining "they shouldn't hurt her and find out when she goes to school". IH made the point

it is too soon to test until other things have been tried. And when difficulties are identified a graduated approach of low-tech strategies might help someone with learning or behaviour differences.

I don't know if I would because if he did have trouble learning then I would try and tech [sic] the baby first then if that doesn't work then see if the teachers could maybe help and if that doesn't work then I may take it to the doctors.

Conversely MD indicated testing when children were older would not be helpful as it would be too late "because they're not babies anymore", perhaps indicating a preference for early intervention

In summary, this category indicates most of the children who considered the timing of predictive testing - a minority - felt that children should wait until reaching school age to test for learning or behaviour differences because by that point children would have more understanding of what was happening and why. However, one voice indicated testing when the child was at school may be too late.

6.3.6. Category 6: What's the point?

This category is about children questioning whether testing can predict learning and behaviour differences in any useful way, and whether there would be intervention, medical or therapeutic, available after testing. Table 6.4 shows that the most frequent codes included: having learning or behaviour differences is not that bad ($n = 24$), schools can't help anyway ($n = 41$) and the child would be loved anyway ($n = 14$). This category highlights that some children feel that testing is unnecessary as children will learn anyway, testing is only for ill people, and testing for learning or behaviour differences would create worry and distress.

I Don't Know got straight to the point explaining:

There is no point taking a test. All it is going to do is worry you. If you had a test and it told you you had learning disabilities you would be worried. Why bother putting a label on it when you can find that out for yourself. There is a chance that the test could be wrong and that just worries me more. Why take a test if you can find out on your own?.

OH agreed there was no point in testing “because you can’t do anything about it because they might not have the medicine to make them better”, recognising that findings from screening need to be clinically or educationally actionable to be justified.

Testing for some would create heightened worry about having learning and behaviour differences as explained by Sooper Happie “because you might have been born with it... and you may be it’s too worse to find out”.

One child commented that testing was only for ill people, explaining about Zeggy “he’s not poorly” (HAB), suggesting learning and behaviour differences were not seen as illnesses by all, and so it would be inappropriate to test for them. Super Sports also made the point that perhaps we should not be thinking about such differences in a deterministic way but should wait to see what happened and judge the child on their own merits: “I think that Zeggy will be different to Zig and Zag” (IB).

ES also commented that Zeggy may resemble one parent more than the other and testing may not be useful as other factors might impact on learning and behaviour “because they have quite different personalities so it will depend on which one Zeggy will be more like”.

DQA suggested learning and behaviour differences “comes and goes”, suggesting a view that learning and behaviour change was dependent on environmental factors and testing may therefore not accurately detect differences.

Some children, however, expressed uncertainty about the benefits of testing “because I don’t know if it’s a good thing to do or a bad thing”. Captain Helpful explained the difficulty in predicting behaviour “because I don’t know if he’s going to do bad or good behaviour” and TR thought learning and behaviour differences were nothing to be concerned about “because something more worrying might happen to other people”. SW explained testing would be dependent on whether or not they would be having a baby and if parents thought there may be something wrong “because if they don’t think there is going to be nothing wrong with the baby then no, if there is something wrong with the baby then yes.” It is interesting to note the children’s use of terms such as ‘wrong’ and ‘bad’, particularly in describing behaviour differences.

In spite of the very deterministic thinking evident in Categories 1 and 2 not all of the participants thought this way. For example, MM explains that having learning differences is nothing to worry about “even if that is true it will not be bad, there is only a possibility of this happening and if it would happen then it will be alright and the child will have possibly gotten extra help while learning anyway!!”. One child explained from personal experience that in time (and development) children with learning or behaviour differences would be okay explaining “I was worried before my sister was grown. She would not be able to do anything! But by the time she grew up she could do lots of things...” (SL).

Having differences, some children thought, would not be easy but felt support would be offered to provide a break for parents whenever needed “Cos they could always call a baby sitter.... That looks after them at their house... anytime!” (RT).

SS suggested what was the point in testing because Zeggy would be loved anyway “because he’s good as he is”. I Don’t Know argued that “even if Zeggy grows up to have learning disabilities Zig/Zag and Zog won’t love him/her any less. They can get Zeggy the help he/she needs”.

Super K however suggests testing would not reveal anything useful as “I think that every baby is different in their own special way and I think that every baby has a different personality and like different things and different places and different food”. When asked whether, after testing for learning or behaviour differences, anyone could help with aspects of behaviour FM suggested schools could not help him with being loving “because my school doesn't do that... and I've started this school”.

In summary the data indicates some children were sceptical about the point of screening for an increased likelihood of learning and behaviour differences, explaining there's not much point because the information won't be reliable or useful. In their way they identified the issue that we should not test for problems that we do not have clear solutions for, that is, that tests need to be clinically or educationally actionable to have value.

These findings show that even very young children (the youngest participants were just four years old) are capable of contributing to public debate in this area, especially when supported by an intervention which promotes discussion and provides a platform (Wall, 2017) for children to communicate their opinions. It is noteworthy that the children in this study held negative deterministic perceptions of life with special educational needs and showed a tendency towards overly simplistic explanations for those needs. Developmental psychology literature suggests that this tendency fits with the development of psychological essentialism in young children (Gelman, 2004), and their growing preference for homophily by the age of four (Schwab, 2018). This is important to know because we know that children make assumptions about others without being taught about categorization (Gelman, 1998) and it is possible that age-appropriate education can be used to counter any harmful effects of that, such as ‘othering’ those who are different.

Chapter 7

7. 'What can a Philosophy for Children (P4C) discussion teach us about children's understanding of the origins and implications of being different?'

7.1. Background

This aspect of the study examined what children said they thought about learning and behaviour differences, and where these differences might come from, in the fourth session of the P4C intervention. Trying to understand children's perceptions about those who are different to themselves could enhance and inform current and future interventions aimed at promoting positive and inclusive perspectives of children with special educational needs and disabilities. (Gus, 2000; Beckett, 2014; McGill, 2019). Currently there is little literature regarding the perspectives of neurotypical children about their peers with differences (Beckett, 2014; Cairns & McClatchey, 2013) and the literature that is available paints a fairly negative picture (Beckett, 2014). Indeed, placing children with and without differences together in a classroom does not mean those who are different will be accepted as friends by their typically developing peers (Pijl, 2005; de Boer et al., 2012; Schwab, 2017).

The final P4C session aimed to understand children's perceptions of the aetiology of individual differences: 'Are babies different to each other when they are born, or do they become different growing up?' This aimed to answer an overriding question: 'What does it mean to be different? Where do our differences come from?' The context for the session was an 8-minute BBC clip entitled Same but Different, Life with Down Syndrome:

Alexandra's Story: <https://www.bbc.co.uk/programmes/p07t8rfh>

The BBC clip tells the story of triplet sisters, one with Downs syndrome – Alexandra - and her identical twins, from their own perspectives. The stimulus was chosen because two of the triplets were unusually similar and one was, perhaps, unusually different and had a clear learning difference.

All of the groups taking part (EYFS, Year 2 and Year 5 groups from both schools), did so as a philosophical inquiry. Previously, the EYFS class in School 2 had been developing P4C inquiry skills and had up until this point been facilitating hybrid circle time/P4C sessions.

Field notes taken during both School 1 and School 2's final P4C session highlighted noteworthy findings. In School 2, Year 2, the session was received particularly positively as one participant's sibling also had Down's syndrome and they commented, within the reflection section of the session, that they were happy and proud and had enjoyed watching someone else with Down Syndrome being able to do something (positive) (Field notes, 11/2/2020).

7.2. Methods

7.2.1. Participants and Measures

Participants are described in full in Chapter 3, 3.3.2. The planning for the final P4C session can be viewed in Chapter 3, 3.2.4, Figure 3.3. All planning documents for each of the four P4C sessions can be seen in Appendices 5-8.

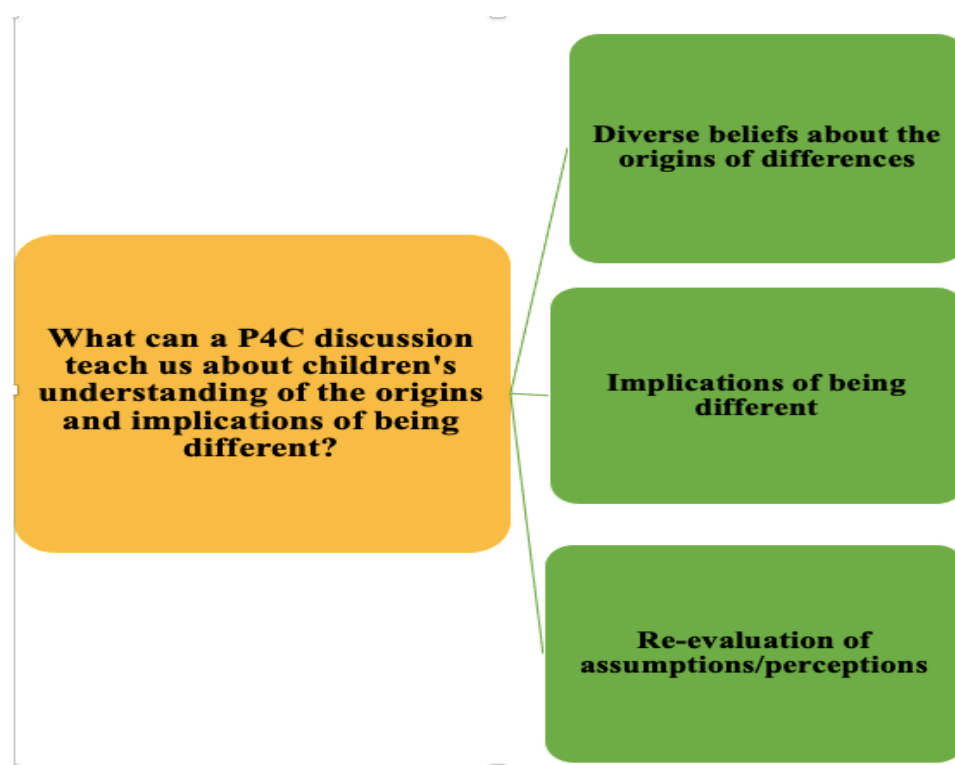
7.2.2. Coding and Analysis

The recordings of the six final P4C sessions (Session 4 undertaken in three classes in two schools) were transcribed verbatim and an exemplar transcript can be found in Appendix 15. A full description of the coding and analysis can be found in Chapter 3.

7.3. Results and discussion

Three primary themes were identified in the data from the transcribed sessions, as shown in Figure 7.1 (1) *mixed beliefs about the origins of learning and behaviour differences*, (2) *implications of having differences*, and (3) *re-evaluation of assumptions and perceptions*. These themes are illustrated in Figure 7.1. These themes reflected the perspectives of the children in the intervention groups (n=84) when discussing whether babies are born different or whether they become different as they grow, highlighting their perceptions about where differences originate from, and what it means to be different. The conversation within the P4C session focussed on disability but also more wide-ranging perceptions such as similarities and differences between peers and within families.

Figure 7.1 Thematic Map of Data



7.3.1. Theme 1: Diverse beliefs about the origins of differences

This theme captures the children's mixed perceptions regarding the aetiology of being different. The discussion between the children suggested that their understanding is gained from personal observations of physical and personality differences in babies and children. Individual children within the P4C discussions took both deterministic and blank slatist positions about where individual differences originated, suggesting that they were really not sure. Throughout the P4C discussion, children were asked to think about the video clip of Alexandra and her siblings Eleanor and Felicia and to reflect on why any differences between them might have occurred.

Two main viewpoints were derived from the P4C data. Firstly, some children felt that we are all born different and commented that observed physical differences confirmed that we are different. The second, and opposing viewpoint, was that some children think we are all born the same and that differences from outside of us (i.e. the environment) make us different.

Analysis of the first perspective indicated that some children were making a case that everyone is born different because this matched their own observations and experiences— and through watching the stimulus for the P4C session. This understanding was highlighted by children across the dataset and particularly featured in contributions from Super S (Yr 5) who observed differences but did not question where they came from:

I think that erm... it's both because everyone's different... like er.. nobody is the same.

Even twins are still different even though they look the same.

The discussion of physical differences between the triplets, Alexandra, Felicia and Eleanor, in the video clip engaged the children in noticing various differences in attributes

such as eyes “they have different eyes” (IF, EYFS), and tongue “one of them sticks the tongues out, that was the little one under the parachute” (referring to Alexandra, who has Downs syndrome) (HG, EYFS), hair differences “they’ve both got both black brown eyes and brown hair but Alexandra was blonde, blue eyes, and she said yellow hair, but I think it was blonde” (Dance Drama, Year 5), the triplets size “it was the one that was smallest” (HG, EYFS), and differences in choice of clothing. This also led children to question the facial differences between all of the triplets:

what also makes us different is maybe erm... maybe... just like... erm... everyone’s face looks different - even siblings do cos... even though twins’ faces look the same... they might... one part in their faces might be different to the other.... (Super S, Year 5)

and also, to question the differences in mouth features “Why does her mouth go like that? Her mouth goes different” (Rugby Man, Year 5). It was interesting to note that children alighted on typical distinctive features of Down Syndrome in their comments e.g. a distinctive eye shape, challenges with holding the tongue within the mouth and a tendency to be smaller than average. It was particularly the facial differences between Alexandra and her sisters, Felicia and Eleanor, which suggested to the children that Alexandra was different, and this might be because of Alexandra’s Down syndrome. Some children accepted the evidence of their eyes as evidence that Alexandra was born looking different to Felicia and Eleanor.

They were also able to go a step beyond that and to suggest that, even though Felicia and Eleanor did not look different to each other there might be differences inside them that would make them differ from each other as well as from Alexandra.

Looking the same physically, or similar, but being different internally was recognised by Secret Spy (Year 5) who commented: “our personalities [make us different]” and Emma

Cat Loo (Year 5) suggested the importance of differences internally explaining “it’s not what you look like on the outside it’s your personality is on the inside”. This was reiterated by Baller (Year 5):

what’s different about the girls is that they all had.... they were all quite similar but they all had slight different personalities. Like how some of the girls... one of the girls probably had a bit more of a calm so... for example Alexandra a bit more of a calmish... sort of try to get involved type.

Some children pointed out that even twins and triplets have differences in personality, preferences and behaviour, with one participant indicating that “when babies are born I think erm..... They are different to everyone else” (Elme, Year 5). This represents a view that differences are present from birth, potentially inborn. The children perceived that having preferences or liking and doing different activities and hobbies was a sign that everyone was different. Rugby Man (Year 5) explained “they may be different because, maybe two of them want to do that activity. But maybe one of them thinks they want to do a different activity” and Mrs Brave (Year 2) noticed that “she [Alexandra] goes on her computer ... she doesn’t like the noise...”.

Being different on the inside was something that AMH (EYFS) noticed in relation to Alexandra, the sibling with Down Syndrome: “they might be something different in their bodies” and some children felt that might explain why she “acted differently” (Sooper Happie, Year 2).

Building on comments made by a child, who had not consented to participate in this study, about DNA making each person different, Super S (Year 5) also alluded to it being a good thing that we’re all different by explaining “erm... like we said...erm... the forces that ... cos if there was a.... if they were all the same it would be boring on us “.

This was reiterated by Sparkly Reenie (Year 2) who explained that one of the triplets had Down Syndrome and the difference happened before being born: “it’s something that you were born with...”. Captain Ciccer (Year 2) also tried to explain why the triplets in the video clip were not born exactly the same by pointing out “she had Down Syndrome and her sisters didn’t” – making a distinction that ‘something happened’ prior to being born.

The P4C discussion also highlighted that some children perceived babies to be born different, because of different parentage (Super S, Year 5), but also that developmental physical changes and how our choices affect interactions with the world can change us. These ideas are highlighted in observations made by Captain Ciccer and Elme respectively:

I think you’re different when you are a baby and when you are a grown up. Because when you are a baby you don’t have hair and other babies might have their hair before you. And when you’re grown up I also think you are different because when children grow into a grandad or daddy you might have... if I had brown hair when I was a baby erm... it might turn a bit darker as my life goes on (Captain Ciccer, Year 2)

when babies are born I think erm..... They are different to everyone else ... but they erm... as I say they can do [inaudible] and when they grow up they grow up they learn a lot of different things. Some people now like... are adventurers and some people like computers and stuff... (Elme, Year 5)

Some children’s views came close to suggesting genetic determinism at points, in explaining that there was no choice in how children learn or behave: “I think that you can’t always like control like how you learn and behave because you might have anger issues and like... control it better. Erm...” (The Acro Star, Year 5).

However, in spite of expressing some vaguely genetically deterministic views some children also saw that you can draw from your environment to improve, and there was a choice in whether you accessed help and support or not:

because everyone is different... everyone is different by their learning so like somebody would be really good and somebody won't be as good. So if you choose to do that and you may put in loads of effort and like have people helping you, but you don't choose for that to happen, you were just born like it and you can't.... You can do something to stop it... but it can't go, like even if they know I don't want you to come help you or no I want to like learn... I don't want any help then you are choosing that... you are choosing how you are learning. You can't choose how like... how you're supposed to learn (Dance Drama, Year 5).

Indeed, further discussion highlighted that some children perceived that practicing something would lead to improvement and being perfect and not perfect at something, simultaneously, was achieving their personal best. This was reported by the teacher: "Super Penlicens said something really interesting. Some people are perfect and some people aren't. But you can get better at things if you practice them". This perception highlighted an acceptance of genetic influence on individual differences, but also that a personal best in learning can be achieved if you choose to work hard enough.

However, some children also expressed the second viewpoint that we're all born the same and that our differences come from outside of us (experiences with the environment) and that makes us different – although this view was expressed less frequently across the dataset. Super S (Year 5) explained "but maybe there's something kinda like born the same way but... but... they go on to be very different". This appeared to represent a kind of blank slate thinking.

Some children alluded to “going on to be different” as interacting with the environment and growing up and having different experiences would lead to becoming different, and this would be accentuated over time. Super S anticipated that just growing up, development over time, would change the triplets “I think growing up might erm.. make them change a lot” (Super S, Year 5) and Flash (Year 2) suggested that accessing and experiencing different educational settings and “going to different schools...” would alter children too.

Moreover, I Don’t Know (Year 5) suggested that children, and particularly twins and triplets, would want to be different whilst growing up, explaining their perceived negative feelings and understanding about being treated as one person:

I think you’d be able to notice their differences more over time because... they’ll start pointing.... Because twins and stuff are probably recognised as one person because they like weird things and buy the same clothes, but then as they get older you’ll be able to notice that they want to be different people and have different things that they like.

In summary, there were two viewpoints derived from the P4C data. The more prominent was that our observed physical differences are confirmation that we are all born different – arguably supporting literature which suggests that “children possess a rudimentary understanding of genes as being passed down from parents to child and involved in the emergence of physical characteristics” (Meyer et al., 2020, p. 2) and the less prevalent opposing perspective that everyone is born the same and only through growing up and experiencing the world they become different over time i.e. differences are caused by experiences, a blank slate position, which was also highlighted in Chapter 6, Content Analysis findings.

7.3.2. Theme 2: Implications of “difference” and “sameness”

This theme highlights the children’s mixed perceptions of the implications of being different and the implications of being the same.

Although the discussion in the P4C session indicated that several children were not aware of Down Syndrome and its aetiology, an extra copy of chromosome 21, they were able to discuss their perspectives on the consequences of having Down Syndrome through observing the video clip of Alexandra and her sisters. They said that because Alexandra had been born with this condition it would limit what she was able to do, in comparison to her sisters:

it’s harder for them because like... their brain doesn’t operate in a more.... In a more.... sophis... like a better way of moving so that’s why she has to get ready.... Well she has to get dressed by her mum because erm... when she goes in... it’s hard for her and she’s like.... her condition sort of stops that (Rugby Man, Year 5).

As the direction of the P4C session was led by the children, other differences were discussed. This highlighted confusion over differences such as autism, ADHD and Down syndrome, based on behaviours observed by the children, and from their personal experiences. Examples of this were expressed by Izako (Year 5) and Mathematical Man (Year 5) respectively:

like Secret Spy said he might be a bit autistic and stuff and maybe a lot of autism and any special needs. (Izako)

I also know somebody that has a disability. But I’m not sure if it is one cos my brother has ADHD and I’m not sure if that’s technically a disability. But like what Sick Skate Boarder and Super Talker said that person that Sick Skate Boarder and Super Talker knows, my brother can actually do the exact same thing! He used to... well now he’s

started getting on a bus to high school he remembers what bus is... like... in the back of his head. Cos he has to get the bus in the morning and at night. (Mathematical Man)

The philosophical debate in the P4C session indicated that the children were able to engage critically and caringly, arguing that they perceived autism to be a more pronounced difference than Down Syndrome.

While discussing how Alexandra was different, children commented that both Down Syndrome and other differences such as autism would slow learning down (Child, Year 5). However, building on the argument put forward by another child about the difficulties that Alexandra had, Tianise (Year 5) compared the two conditions, explaining that having autism was far worse. This viewpoint reflects the findings from the quantitative data in Chapter 3 about the differences perceived between Zig (learning differences) and Zag (behaviour differences) and children being more positive towards someone with learning differences compared to behaviour differences:

my brother has autism and it's not like that... autism is kinda of like... worser than that. When you brain thinks differently and sometimes when you try... you get angry at small things (Tianise, Year 5).

Some children felt that having differences like autism, dyslexia or Down syndrome would hinder learning and this was linked to not being able to do things perfectly or be able to control behaviour enough to do things perfectly as Secret Spy (Year 5) explained:

erm... I think that erm.... them two with the brown hair they're trying to look like the same, erm... but the other girl with the blondie hair she's like a bit... erm... a bit autistic and she can't really handle herself pretty much.

This perspective seems to corroborate the literature (Chapter 2) around children not valuing those who are different physically and behaviourally, viewing children with differences as not being able to do much and showing “incompetency” (Beckett, 2014, p. 866).

Brave Rose (Year 2) explained the expectation that having differences would mean not being as good as everyone else “because if we have like autism or something um... it doesn’t mean you do everything perfect and you can do things that are not as good as the other people...”. This quote, and others throughout the analysis of the P4C sessions, highlights that some children place high value on doing things perfectly, and express “other-orientated perfectionism” (Hewitt et al., OOPjr, p.4), towards other children with differences. In this case expressing passive verbal negativity about being autistic and the implications of not being able to do something as well as others. The frequent discussion around perfectionism also highlights Beckett (2014) findings that children are “primarily engaged in enacting a series of ‘hegemonic’ schemas that maintain their privileged position as non-disabled people” (p. 856) ie: children without differences feel they have authority over others with differences because, in their view, they can do things perfectly.

The use of ‘ableist’ (Bottema-Beutel, 2021) language was used on a number of occasions within the P4C session:

Erm... Dyno Syndrome is one of the more common disabilities, I went to my Mum’s work, where she works there was quite a few people with Dyno Syndrome and they were like... they were human..., Erm.. what I thought was that when you have Dynamo symptom or whatever (School 1, Year 5)

Arguably, getting the terminology ‘Downs’ wrong was not meant to be intentionally discriminatory. The fact that the participant could not get the name Downs Syndrome correct

was either because they hadn't quite heard the correct terminology at the beginning of the session or from each teacher correction, after the participant had spoken. There is also the possibility that it was incorrectly said because they thought this might be funny to say (and to make their friends laugh), arguably the participant is still subtly making a distinction "between 'us' (normal, non-disabled people) and 'them' (abnormal, disabled people)" (Beckett, 2014, p. 870).

However, despite this, the discussion from the participant did show growing empathy towards those with differences, indicating that although on the surface there appears to be a developing understanding and tolerance of differences, there is still a need for discussions that go deeper to ask why children think the way they do.

This negative perception was highlighted by Rugby Man (Year 5) who described their personal struggle with dyslexia differences and what that meant for their self-esteem and how they viewed themselves:

like if you're dyslexic erm.. you can't... like you put lots and lots of effort in. You know you won't be the best in the class but... cos you've got dyslexia, but... but you can try your hardest and then you sort of.... You can get as pretty good as you can.

The following shows the children's debate, and their mixed beliefs, and how they were able to challenge each other's viewpoint, from School 1, Year 2, about the question: can anyone be perfect?:

Honest Super Star: I think a person could be different because we can all do something that other people can't do.

T: So are you saying Honest Super Star that everyone has a little bit of perfect in them.

Honest Super Star: (nods)

T: What an interesting thought. Would anyone like to build or add to Honest Super Star's ideas or give their own ideas. You can agree with her by doing this [T models putting hand on chest]. Honest Super Star you choose who you would like to speak.

Honest Super Star: Captain Ciccer

Captain Ciccer: Erm... I don't think that everyone is different because not everyone is good at something, but we're all good at one thing.

T: Can people be good at more than one thing Captain Ciccer?

Captain Ciccer: er.. yes. Caring Splits.

Caring Splits: I disagree because you might not be bad or good at something (School 1, Year 2)

The P4C discussion also highlighted some misconceptions about Down syndrome where children perceived "Alexander had erm.. an illness" (Sports Man, Year 2) and the cause of Alexandra's differences were explained as "because she might have been the last one who's been born so she might have got the illness" (Sports Man, Year 2). The perception of having an illness arguably suggests two things. The first perspective being the expectation that you can get better if you have treatment. Although this is not suggested in the P4C sessions this particular argument was suggested in the Content Analysis (Chapter 6) where children were asked if they thought it was a good idea to test for learning and behaviour differences. An example quote: "yes because he might get better" (Math Man, Year 5) and FM (EYFS) explained "because he's poorly... like my leg!" when talking about Zeggy, the character with potential learning and behaviour differences. The second perspective is illustrated by the discussion between the teacher and Elme who discuss the pressure of fitting into social norms when you are different:

T: yeah, so we're born from different mums and dads and that physically makes us different doesn't it. But what about the emotional side of things? What makes us different? There's no right or wrong answer here I'm just trying to find out what we think.

Elme?

Elme: by being yourself?

T: by me being myself...

Elme: and not changing anything just to be like them...

T: aarhh so maybe that's one of the pressures that's outside of us. The pressure to fit in
(Elme, Year 5)

Indeed, children perceived having these differences made fitting into social group norms difficult (Becker, 1963).

Other issues highlighted by the children's discussion indicated their concern and worry about looking and being the same, particularly around issues such as stranger danger concerns. They made a case that looking and being different is important and necessary. For example, where looking the same on the outside might mean coming into contact and talking to others who may not have good intentions – children are taught and encouraged, from a very young age, to only talk to someone who they know and trust, so if everyone looked the same how would they know who to trust?: “If you were a stranger you wouldn't talk to them” (Sportsman, Year 2), gender confusion “I think it's a bad idea because if you didn't know who was which you couldn't actually see who was a girl or a boy” (Super Sports, Year 2) and the lack of choice as everyone would like the same things “if we all liked the same food there would be no dinner menu!” (Mrs Brave, Year 2).

Children expressed the viewpoint, though, that being the same could lead to equal treatment and no discrimination in friendships: “because if you were all the same you'd

probably make friends with all of you” (Sports Man, Year 2) suggesting that if everyone was the same children would be more likely to be friends with each other. This viewpoint also seems to support the view of children’s developing (Gelman, 2004) “homophily” (Schwab, 2018, p.9) where it is suggested that humans are drawn to groups which are the same.

In summary, some children perceived having a learning or behaviour difference as limiting or slowing down what you can achieve or do, using personal experiences to argue their viewpoint. Some children also expressed the perception that differences were innate, and some of these differences were worse than others, particularly behaviour differences being worse than learning differences, a kind of deterministic view (Dar-Nimrod & Heine, 2011). Children perceived having these differences made fitting into social group norms difficult (Becker, 1963).

7.3.3. Theme 3: Re-evaluation of assumptions and perceptions

Having the opportunity to view the stimulus for the P4C session, Alexandra’s story – told by her sisters, enabled the children within the session to look closely at the siblings’ relationships. Perceptions derived from across the dataset indicated that having differences did not affect family relationships – looking in, children were able to see that Alexandra, Eleanor and Felicia had similar experiences within their family – and observed the siblings caring for, loving, liking, and respecting each other. Children expressed enjoyment observing the achievements and persistence of Alexandra in her daily life – dispelling some stereotypical assumptions which impacted their attitudes towards someone with learning differences.

Towards the end of the session, the Reflection, the children (School 1, Year 5) reflected on their discussion and their learning through the P4C discussion and their changing perspectives:

T: Lovely, and has anybody changed their thinking or moved on in their thinking? We'll go round the circle if you want to say anything put your hand out.... Anything you thought was a bit different today? Baller.

Baller: Erm.. what I thought was that when you have Dynamo symptom or whatever...

T: Down's syndrome.

Baller: Down's Syndrome... er that it would be a lot lot harder than what it actually is. Because what I think is that Alexandra had a bit of a little dose than other people cos I have seen other people like... quite a bit ... like really quite affected by it. But it has really changed my thinking about what I thought that was.

T: you are right because conditions like that can be more severe and less severe. You are right to think that some people might be more affected by Down's Syndrome. We'll carry on round our circle. Super Artist.

T: so having a sister was a positive thing. Sick Skate Boarder and Super Talker.”

Rugby Man: She never really like gave up when she was trying to do stuff... like the gymnastics, she kept on going and er.. Brownies she didn't... she didn't think she was different, and she could do everything that everybody else did.

T: Brilliant – thank you.

The main message this theme demonstrates is that children perceive that having learning or behaviour differences doesn't affect family relationships, as members love and care for each other, despite having differences, and that they view each other equally within the family.

Discussion about this was emotive and children shared their perspectives about how the sisters felt about each other:

I feel like maybe one of the other two sisters... what they think about Alexandra is she's ... she's maybe hard to talk to or they probably think very deeply of her and erm.. love her probably quite a bit (Baller, Year 5).

Tianise (Year 5) explained that the sisters perceived Alexandra equally within the family "erm... is that... is that.... they all care for each other and they don't... the two people with brown hair.... Think that she's not different to anybody else, they think that she's just the same". It is important to note here that thinking she is the same is viewed as a compliment, further support for children's preference for homophily. Discussion also indicated that the siblings might want to look after Alexandra "the two brown haired girls might erm... they might want to look out for their sister... because like if they were going somewhere the brown haired girl is so much different" (Super K, Year 5), possibly because of concern and worry about being bullied for being different.

Children also expressed how the sisters might feel about Alexandra getting more attention from their parents "well I think like that those sisters, like well some people get annoyed about... cos they might... the parents might pay more attention to her... because like they understand a bit...[inaudible] who she was" (The Acro Star, Year 5). Children also pointed out that the Alexandra, Felicia and Eleanor might not want or enjoy doing the same things. Mrs Brave (Year 2) points out - "she [Alexandra] goes on her computer ... she doesn't like the noise..." and Super D (Year 5) explained "They might want to go to different places to have fun". Arguably, these viewpoints could also reflect normal family life and family/sibling interactions.

Showing the stimulus, a video clip of Alexandra and her siblings, enabled the children to engage in questioning where differences come from. This provided an opportunity for children to learn about and understand differences (through the video and philosophical

discussion) and enabled the children to re-evaluate their perceptions and view differences in a more positive light. For example, one child (School 2, Year 2) viewed the video clip as their favourite part of the P4C session because it portrayed their own sibling in a positive light and another who thought it was interesting to learn about someone who has Down Syndrome:

T: right... 5,4,3,2,1,0 (children quieten). Anyone want to tell me what their favourite part of today's session was... er... er.. Flash...

Flash: er.. the video...

T: the video... why was the video your favourite part of the session?

Flash: erm... because erm.. my sister has Down Syndrome.

T: so was it nice to see somebody else with Downs Syndrome and what their life is like... yeah... very interesting...

Flash: (Nods)

T: ...and the last one from Hulk Smash what was your favourite part?

Hulk Smash: the video because it was interesting to see how people who have Downs Syndrome do.

In the reflective part of the session, the children were able to comment on what they had learnt. Some children found the video clip interesting because it gave them an insight to other children's lives who live with a disability. One child expressed the view that "I learnt something new about Down Syndrome" (Rugby Man, Year 5) and another about how "it has really changed my thinking about what I thought that was [Down syndrome]" (Baller, Year 5).

In summary there were some signs in the dialogue that the opportunity to learn about and discuss differences had a positive impact on some children's attitudes towards someone with learning differences.

The use of the stimulus, video clip of Alexandra's story, and subsequent discussion supported children to discuss and debate their ideas around differences, and in this particular P4C session about someone with learning differences, Alexandra.

Through the session the children were able to observe, acknowledge and understand that Alexandra required support for some self-help skills such as "putting her clothes on..." (Sparkly Reenie, Year 2) and "putting her shoes on..." (Brave Rose, Year 2) – something akin to what they may have experienced themselves at some point in their life. Other aspects of Alexandra's life also needed support: "Alexandra's has an extra teacher.. she has three extra teachers... one for school... one for swimming... and one for ((Gymnastics...))" (Batman, Year 2) - the children recognised that this did not stop Alexandra from doing things, with children noting her resilience:

she never really like gave up when she was trying to do stuff... like the gymnastics, she kept on going and er.. Brownies she didn't... she didn't think she was different and she could do everything that everybody else did" (Rugby Man, Year 5).

However, the children were focussed on Alexandra needing help with some aspects of her life, and only a few children noted Alexandra, during a mathematics session, helping another child (Logan) with his numeracy skills. This was only briefly discussed during the P4C dialogue, and it took a teacher to highlight this (School 2, Year 2). Arguably, this could indicate the children's possible underlying "cultural schemas" (Beckett, 2014) of only seeing others with differences as somebody who can't do something or needing help.

Requiring a different teacher and group to help Alexandra with swimming did not stop one child (Year 5), whilst watching the swimming session with Alexandra, exclaiming: "Oh my God, she's good". This reaction seemed to indicate a breaking of stereotypical assumptions.

Requiring support for a difference was discussed as a normal everyday fact - one child related Alexandra's experiences of needing support to their own experiences of needing help sometimes "I'm a bit scared of going skiing next year and erm.... and erm.... and (inaudible) skiing and so he might help me." (EYFS child). The need for support and not being perfect at everything was also widely accepted by the children across the dataset.

Indeed, Baller (Year 5) explained "no one can be perfect at everything... I feel like Jesus had to have something he could have improved on", and Flash (Year 2) acknowledged that "if you are trying to do something first time then it wouldn't work out...". J explained "we all have a little cry at something and it doesn't matter" to explain how being different and finding something difficult might make you feel.

The P4C session facilitated discussion around the similarities and differences the children had observed through the video clip of Alexandra and her sisters' story. Through their observations, the children recognised that Alexandra and her sisters had many similarities and some differences. The children were able to highlight their differences in swimming abilities (JC, EYFS) and attendance at different groups (Galaxy Girl, Year 2) but also the siblings' shared experiences, such as "they were born at the same time..." (Hulk Smash, Year 2) and going to the same school and being in the same class (Mrs Brave, Sparkly Reenie, Year 2).

The viewpoints drawn from discussions indicate that many of the children perceive that everyone is an individual, and they are empathetic about this, recognising that everyone has differences and may need support, viewing Alexandra within the same perspective. The children in the facilitated P4C sessions were aware of everyone's differences in learning and behaviour and were empathetic and respectful in their dialogue when talking about this, as Rugby Man (Year 5) demonstrates:

people with Dyno Syndrome and they were like... they were human... they were no different to us they its just they do struggle more to do stuff because of their condition.

Above showing empathy, this particular quote also supports the literature around children questioning and breaking down the “normal/abnormal binary” (Beckett, 2014, p. 870) where children view being different or having differences as ‘them’ and ‘us’. Quite strikingly, the quote almost fits, word for word, the findings from Beckett (2014) data: “disabled people are still human beings. I don’t think we should treat them different ...’ (girl, Year Six, School D)” (Beckett, 2014, p. 870).

In summing up this theme, when children have the opportunity to learn about differences, they are able to dispel some stereotypical assumptions which impact their attitudes towards peers with learning differences. However, there is still some way to go in transforming children’s “cultural schemas of disability” (Beckett, 2014, p. 872) and this can be supported through interventions like the one in this current study.

In conclusion, three main themes were derived from the P4C discussion and gave an insight into the children's understanding of the origins and implications of being different. Firstly, that the children’s perspectives were quite superficial on the origins of difference, compared to their answers in the content analysis (Chapter 6). Secondly, the children had much stronger ideas around the implications of differences and sameness and finally, the children were able to explain how the discussions had enabled them to positively re-evaluate their assumptions and misconceptions around differences such as Downs Syndrome.

Chapter 8

8. Discussion

The aim of this PhD research was to find out whether a P4C intervention, specifically designed for the study, could enhance children's understanding and tolerance of diversity in learning and behaviour. An exploratory element of the study also asked about children's perspectives on whether it is important to predict learning and behaviour problems and if genetic screening could have a role to play in this.

This chapter discusses the study's main findings with reference to each of the three research questions.

8.1. RQ1. How do primary school children view learning and behaviour differences, and to what extent can a brief Philosophy 4 children (P4C) intervention change their feelings, behaviour, or thoughts?

Chapter 4 describes how the current P4C intervention was partially successful in altering children's attitudes. The aspect of attitude which showed a significant positive effect of intervention was children's feelings (affective aspect) towards someone with learning differences, and this finding is well aligned with existing literature (Bellanca & Pote, 2013; Hellmich & Loeper, 2018).

The current study was partially successful, despite the intervention being short, and this may be due to several factors. Firstly, the intervention's age-appropriate use of the Zig and Zag puppets (Dunst, 2014) and the resources used (books and educational video clips (Cruse, 2006)) as stimuli for each of the sessions. These provided a concrete concept from which to discuss and debate the P4C's session question. Field notes made during each P4C

session, offer further confirmation that the children had a positive reaction to the ungendered characters (Epstein et al., 2007) Zig and Zag, which were introduced during pre-testing. The factual information about each character, presented to the children through the differentiated books and comics, seemed to encourage empathy in some of the children, particularly around Zig, with learning differences, and provided age-appropriate ways of explaining the difficult concepts, supporting the partially successful outcome of the study. Gus (2000) suggests when children are provided with factual information – they are more likely to have empathy towards someone who is different. The children also appeared to enjoy the themes within the sessions, engaging in them by being prepared to express their viewpoints. However, if the intervention were to be scaled up, the books could also benefit from a slightly different approach – ie. that each day would depict what happened, then the next page would explain what really happened and why. This approach, arguably, would provide further in depth understanding of what children with learning and behaviour differences experience during a school day. To develop this concept further, making the books into small 5-minute cartoon videos could be used as another tool in the measure and may appeal to all age groups. See Chapter 3 (Methods) for a full description of the books.

The second reason why the study was partially successful was that the study enabled interactions between peers, with and without differences, in the P4C session, and enabled meaningful discussion about differences (Gaad, 2015; Novack & Bartelheim, 2012). The positive results highlight that this active ingredient of P4C, dialogue and debate between peers, was key to the enactment of change of children's feelings towards learning differences. The final reason why the study was partially successful was because both schools provided an inclusive ethos and enabling environment, through facilitating the P4C sessions, ensuring all the pupils within the class were able to work together (Adibsereshki & Salehpour, 2014;

Cairns & McClatchey, 2013; Georgiadi et al., 2012; Gökbulut & Yeniasır, 2018; Ottoboni et al., 2017).

Although there was no significant effect of the intervention on the cognitive (thoughts) aspect of attitude, there was evidence of a positive trend, improving children's attitudes towards Zag (behavioural difficulties). It is possible that the sample was underpowered to detect any significant changes (with some participants being away from school when post-testing was undertaken).

Arguably, the reasons why children's thoughts and behaviours were not altered through the intervention might be because some attitudes are stronger than others and therefore more difficult to challenge or alter (Fazio, 1990). There are a number of reasons why it was more difficult to target within the study. Firstly, and on reflection, the four one-hour sessions, delivered over four weeks, focussed mainly on learning differences (sessions three and four used books and discussion around cerebral palsy and Down syndrome) – and arguably did not target enough about behaviour. There was only one session regarding behaviour differences, which may not have provided enough time for the children to discuss them adequately. The second reason could be that children may have already formed stereotypical views of behaviour differences and the stigma that surrounds this (Telesia et al., 2020; Ferrie et al., 2020). This was observed, in field notes, at pre-testing, when the Zig and Zag characters had been introduced and their differences discussed. Children, through their discussion highlighted what they thought were acceptable and unacceptable behaviours in the classroom, particularly when thinking about the character Zag. Some of the children wanted to fit in with the group consensus and discussed Zag's behaviour at school as 'bad' or 'naughty' (also highlighted in Chapter 6), therefore indicating their growing and somewhat developed homophily (Schwab, 2018) and psychological essentialism (Gelman, 2004).

Homophily and response bias (Pekrun, 2020) was also observed when the children completed the self-report questionnaires after learning about Zig and Zag. As children were completing their questionnaires some were reading out aloud (to themselves). This sparked some discussion about Zag's differences, with some children agreeing with each other that the behaviour Zag displayed in the books/comic strips was bad or naughty – potentially providing motivation for enhancing their viewpoints to be negative.

The findings also indicated that all age groups felt more positive towards someone with learning differences both before and after the intervention, with no effect of intervention. This aligns with what is known about children and young people generally being more positive towards learning than behaviour differences (Litvack, 2011). The reasons why children prefer others with learning differences over those with behaviour differences could be attributed to the behaviours shown by some children such as being “‘too loud’ or ‘too hyper’” (Cairns & McClatchey, 2013, p.127) and which might be ‘intrusive and distracting’ (Cairns & McClatchey, 2013, p. 127) to their learning within the classroom (Dell’Anna et al., 2021). These perspectives are aligned with the current study discussions at pre-testing and also when the children answered open-ended questions about screening for an increased risk of learning or behaviour differences (Chapter 6) and their use of language such as ‘bad’ and ‘naughty’ to describe Zag with behaviour differences.

An implementation and process evaluation were conducted after the intervention had been completed. This made clear that fidelity to the intervention in both schools had been varied, in the timing of sessions and in how the teachers used planning guidance to answer the P4C overriding session questions – which could have impacted findings.

The process evaluation highlighted the real-world challenges of conducting an RCT in the current study, in two primary schools, (Wheatley et al., 2020). It also highlighted that it

can be difficult to mitigate all eventualities, to ensure the best outcomes. I was ‘acutely aware of the contingent and context-specific nature of educational interventions’ (Conolly, 2018, p. 290). One of the context specific elements I mitigated against was in reducing the Hawthorne effect (Sedgwick & Greenwood, 2015). I did this by ensuring that the usual teachers delivered each of the P4C sessions. However, there was still a difficulty, as some of the teachers had expressed their concern about the stimulus for one of the sessions (see Chapter 5 for process evaluation), which potentially influenced the social acceptance of children with differences (Huber et al., 2018).

Field notes taken prior to the P4C sessions indicated this potential when the teacher openly discussed their concern about the stimulus in front of the children. Huber et al (2018) suggests that young children, and in the case of the current study – primary school children, observe teacher’s comments and feedback (either positively or negatively) to other children as a ‘social reference’ (Huber et al., 2018, p.271) of how that teacher feels about particular children, therefore acting as a reference to expected behaviour. In effect the teacher could potentially be a gatekeeper to how children view disability:

Therefore, positive teacher feed-back improves the social acceptance of a schoolchild, and negative teacher feedback worsens social acceptance and promotes rejection (Huber et al., 2018, p. 271).

Field notes and observation of the third session of the P4C intervention, highlighted negative social referencing when the teacher referred to the stimulus – a narrative of a child’s perspective of their sibling who had cerebral palsy, negatively (See Chapter 5, Process Evaluation). It also did not give the children an opportunity to make up their own perspectives about the stimulus, which had been directed by the teacher from the outset. I had anticipated this difficulty might arise with the teachers either not understanding the

sessions or why the stimulus had been chosen. Training was offered to all the teachers, but this was not taken up in School 1. To counter this difficulty, and in reflection, after I had delivered the resources to the schools (1 month prior to the start of intervention) I should have requested that all intervention teachers were expected to attend training around the resources and stimuli, rather than waiting for teachers to approach me with questions or uncertainties. This would have been a good opportunity to allay any concerns about using the stimulus and how to introduce the sessions to the children.

The process evaluation also highlighted the challenges of implementing the study from the Autumn term (September), which made it difficult for School 1's EYFS teachers and children, to fully engage with a philosophical enquiry. This was because the children had just started school and were just beginning to develop the skills needed to take part in a P4C enquiry. Further studies, using a P4C approach and involving such young children (from 4 years) would most likely need to be undertaken in the Spring term – when children have developed some skills using the 4 C's (collaborative, caring, critical, creative thinking).

My reasoning for using the P4C format as a tool for the intervention was because I perceived that other methods, such as circle time (see Chapter 3 for methodology choices), may not have produced the back and forth discussion and direction from the children that was needed to answer the session questions (Bustamante et al., 2018). However, on reflection and after conducting a process evaluation (See Chapter 5) I now believe that the teachers' approach in the P4C sessions may have limited the dialogue needed to answer each question, as there was an increased focus on the skills needed for the P4C enquiry (see Chapter 5, Process evaluation). Focussing on recruiting P4C schools also placed limitations on which schools could take part. Although the P4C sessions did offer the children a developmentally appropriate opportunity to develop higher order thinking skills and to debate and challenge

each other to some degree (Glazzard, 2016), this could potentially be accomplished using a circle time approach (Glazzard, 2016). If I had designed a hybrid P4C/circle time approach to the study (ie. circle time with rules about how the children should engage in conversation and debate) then this could have potentially widened the scope of recruitment to all schools and to further children. Therefore, it would be more accessible and inclusive as many schools do not have embedded P4C.

There is a potential for this pilot intervention (efficacy trial) to be scaled up, either through P4C enquiry or potentially as a circle time intervention (with some minor interventions). However, the differences between School 1 and School 2's implementation of the intervention indicated that this would need careful training and monitoring to ensure fidelity to the design of the study.

There would be a need, if scaled up, to introduce a 'usual practice' survey for the control groups taking part at the beginning and end of the study – to ensure firstly a deeper understanding of what control groups had been doing during the study, but also to have a clear plan and assurance that topics covered would definitely not overlap.

In scaling up the current intervention, there should also be consideration for lengthening the intervention from four sessions to eight sessions to provide more depth to the behaviour aspect of the intervention and also to reduce 'fade-out' effects (Sokolowski & Ansari, 2018, p. 8) as delayed post testing indicated (for School 1 only) that the effects of intervention had waned, so by increasing the intervention sessions, it could potentially impact on longitudinal efficacy.

Delayed post testing data was not collected from School 2. Covid 19 restrictions meant I was unable to access the school or the participants. For any potential future scale up,

there may also have to be other ways of accessing children's – this is outlined in 'What I have learned by, and about, including children's voices' (Chapter 8, section 8.4).

In summary, the P4C intervention, partially worked in that it made children's feelings towards someone with learning differences significantly more positive . The reasons why the behaviour and thought aspects of attitude did not significantly change could potentially be because children by the age of five or six years of age, and from their own observations of others, have already decided their perspectives of the characters Zig and Zag – and this did not change irrespective of intervention. The intervention has the potential to be scaled up, but this would need careful monitoring and evaluation.

8.2. RQ2. Do children think it is important to predict learning and behaviour problems and do they think genetic screening has a role to play in this?

In answering the open-ended questions, during the post testing period after the intervention, the data derived found that even very young children (the youngest participants were just four years old) were capable of contributing to public debate about genetic prediction of behavioural outcomes, especially when provided a platform to communicate their opinions (Wall, 2017). Children indicated that they have strong views on what it means to be different and can express considered opinions on whether DNA screening for those differences would be helpful or harmful. In light of this, responsible research into the future use of DNA data in education should seek children's views and also explore ways of enhancing children's genetic literacy.

It is noteworthy that the children described very negative perceptions of life with special educational needs and showed a tendency towards overly simplistic and sometimes contradictory explanations for those additional needs. For example, some claimed that

behaviour is learnt and can be self-controlled, but also that if your parents ‘had it’ then you would definitely ‘get it’ too.

It was noteworthy that a substantial proportion of children expressed worry and concern about being – or being seen – as different. They indicated that they thought they would have difficulties in being able to form friendships and worried about having difficulties with learning and everyday tasks. Developmental psychology literature suggests that this tendency fits with the development of psychological essentialism in young children (Gelman, 2004), and their growing preference for homophily by the age of four (Schwab, 2018). Further understanding the aetiology of these developing capabilities and perceptions represents a research priority for both genetic researchers and inclusive education researchers. It would also be a positive step to develop innovative and appropriate science communication approaches for young children regarding determinism and difference. This is important because we know that children make assumptions about others without being taught about categorization (Gelman, 1998) and it is possible that age-appropriate education can be used to counter any harmful effects of that, such as ‘othering’ those who are different, see Chapters 3 and 6 for findings.

Children indicated that they were sceptical about the point of screening for risk of learning and behaviour differences. They commented that there wasn’t much point because the information wouldn’t be reliable or useful, indicating that diagnosing a risk of something might increase worry and concern (Shrifrer, 2013). In a simplistic way the children identified the issue that we should not test for problems that we do not have clear solutions for, that is, that testing for needs are much in line with some adult and professional perspectives (Asbury et al., 2021).

The children offered some important insights that are highly relevant to educational genetics wherein issues of stigma and self-stigma, and also expectancy effects, need to be

taken seriously. For example, children were worried about having a learning or behaviour difference and being seen as different, which they said might affect their friendship development (Thornberg, 2018; McGill et al., 2018; Godino, 2016). The responses to the questions also highlighted children's perspectives about testing for differences, and the 'so what?' element of testing – especially as this might mean a significant life change - and there not being anything (intervention) to help them (Mand et al., 2013), which in turn would play a 'significant impact on sense of self' (Godino, 2016, p. 500). Literature suggests that knowing about your risk status could have a positive effect and reduce any feelings of fault (McConkie-Rossell et al., 2008) the current study findings indicated this not to be a straightforward positive as the children expressed their concern and worry about being identified as different. This is important because we know that children make assumptions about others without being taught about categorization (Gelman, 1998), particularly around behaviour differences, which children believed to be bad or naughty (see Chapter 6 for findings).

Arguably there was a possible limitation or source of bias in the formulation of the open-ended vignette questions, particularly in the formulation of question 2, on the questionnaire at post testing. It is possible that in explaining 'that there is **a good chance** that baby Zeggy finds learning or behaviour tricky and that you **can find out** by going to the doctor for a test' we could have inadvertently nudged some children towards expressing genetically deterministic views. Using 'ableist' (Bottema-Beutel et al., 2021) terminology such as 'you can find out whether there is a good chance' arguably suggests that there is something problematic within and therefore the language could promote thinking aligned with the medical model of disability (Bottema-Beutel et al., 2021). However, I also make the case there that there was no sign in the data that children responded to question 2 with more deterministic views than they did to the other three questions.

In summary, the children's responses offer a unique insight into how young children think they would feel about themselves if they were identified as being at risk of a neurodevelopmental disorder from birth, as well as how they perceive the lives of others with special educational needs and disabilities. In knowing about their perspectives, it gives the opportunity to add their viewpoints to this contentious debate (Asbury et al., 2021).

8.3. RQ3. What can a P4C discussion teach us about children's understanding of the origins and implications of being different?

The findings from a reflexive thematic analysis of Session 4 suggest that young primary school aged children have the capacity to discuss their perceptions of difference between people and the origins of those differences, when given a platform to do so (Wall, 2017). This could help to reduce the negative impact of psychological and genetic essentialism and children's stereotypical assumptions about phenotypic behaviours.

The final P4C session highlighted children's mixed perceptions about the aetiology of differences and their perceived implications of being different. A thematic analysis of the 6 transcripts of Session 4 found evidence of deterministic thinking, with some children favouring environmental explanations and others genetic explanations. Both of these perspectives, as the literature suggests, may be developmentally appropriate, particularly psychological essentialism (Gelman, 2004) and the development of genetic essentialism (Dar-Nimrod & Heine, 2011) (See Chapter 7 for findings and discussion). Both of these 'essentialisms' have been found to stabilise around the age of 4/5 years, until which time children categorize by 'generalising knowledge to new category members' and 'constructing causal explanations' (Gelman, 2004, p. 404) for them. This was exemplified in the findings from the final P4C session, where children indicated a very simplistic view of genetics, how genes were passed on from parents to children, how some of the learning and behaviour

differences were worse than others (Dar-Nimrod & Heine, 2011). Having learning or behaviour differences, children perceived as making them different, which in turn makes fitting into social group norms difficult (Becker, 1963). This was also highlighted in the exploratory genetics' findings (Chapter 4) which indicated a potentially unintended consequence of the P4C discussion (Chapter 6) - that by raising awareness of learning and behaviour differences could heighten children's worries about having differences. The findings also indicated that although some children expressed blank slatist perceptions, perceiving all babies to be born exactly the same, they also felt that being the same would be boring, confusing and worrying. The one positive viewpoint from this perspective was that if everyone was the same it would lead to equal treatment and less discrimination in friendships – something the current intervention was trying to encourage (Maguire et al., 2019).

These findings were also reflected in the RCT results where, after the P4C intervention, children in the intervention group were significantly more positive about their feelings towards someone with learning differences, than those in the control group.

This analysis suggests that by giving children the opportunity to discuss and learn how learning and behaviour differences occur, at an early age, and providing children with opportunity to discuss their perceptions of difference, ie. why children behave or learn in a certain way in the classroom, children could be supported to make:

category-property associations (such as the association between “girls” and “pink”) in *structural* terms, locating an object of explanation within a larger structure and identifying *structural constraints* that act on elements of the structure (Vasilyeva et al., 2018, p.2).

For example, the current study provides children with factual information about differences (eg. a child who has Down syndrome), locates them within a context the children

understand (eg. home or school) and then explains, through the intervention, what having differences means for that child and the barriers and enablers to that child's experiences (through discussion of the stimulus in the P4C session). In doing this, children could be supported to reduce stereotypical assumptions about behaviour differences (Kaushik et al., 2016), or categorisation based on prejudice, which in turn may reduce bullying. For example, giving children the opportunity to observe someone with Down syndrome, and being able to discuss how Alexandra's differences occurred and what these differences meant for her (See Chapter 7 for findings and discussion), gave rise to some children reassessing their assumptions through engaging with the factual information, which highlighted Alexandra as a person - with strengths and weaknesses. Vasilyeva et al. (2018) suggests that children as young as 3-4 years are able to do this, to varying degrees, and the current study offered this opportunity. The current study and Vasilyeva et al. (2018) findings indicate that a P4C intervention – or potentially just some classroom time devoted to equality, diversity, and inclusion issues in relation to children with SENDs - has the potential to positively alter children's attitudes about differences, particularly when provided with explanations as to how learning and behaviour differences can impact children with differences when at school.

The session transcripts indicated that children held mixed beliefs about the consequences of differences and indicated confusion between SEND differences such as Down syndrome, highlighted as a focus for the P4C sessions, autism and dyslexia. Children perceived having a difference meant not being able to learn and behave as well as others. However, when provided with the opportunity to learn about and understand differences (through the video and discussion), they showed themselves capable of re-evaluating their perceptions and viewing differences in a more positive light. And other studies using P4C have also shown that P4C can develop non-cognitive skills such as empathy and social, communication skills (Siddiqui et al., 2019).

There are potential positive implications for education, particularly as the current study listened to the perspectives of children with and without differences in the P4C session, something that Woodgate et al (2019) suggest as needed when trying to develop inclusion. If children are able to re-evaluate their perspectives through learning about and discussing differences (Federici, et al., 2017), even from a very young age, it could mean a reduction in stigma (Fox, 2020), self-stigma and bullying (Maguire et al., 2019), and could promote peer relationships - tolerance and acceptance (de Boer et al., 2013), and ‘promote cross-SEN-status interactions’ (Schwab, 2019, p. 398). Encouraging debates and conversations about differences, through a P4C intervention or similar, could negate the perspective that just putting children together in the same classroom, with and without differences, enables the development of positive attitudes towards those who are different (Schwab, 2016).

Indeed, there are several empirical studies which support the potential usefulness of P4C for enhancing attitudes to difference, for example moral development (Walker et al., 2013), language and knowledge skills (Dasi’s et al., 2013), counter bullying (Glina 2009), develop empathetic skills (Aslanimehr, 2015, p. 340). Siddiqui et al. (2017) suggests that there is currently scant data regarding non-cognitive development after school-based interventions, but the existing research suggests a slight positive impact of P4C intervention in spite of a relatively small sample. This positive impact could be due to the amount and “quality” (Topping & Trickey, 2014, p. 69) of discussions held within P4C sessions, which the current P4C intervention provided. However, there are some that argue that children do not have the capacity or to think critically or to argue in complex ways which supports the notion that they are not capable of undertaking philosophical enquiry (Daniel & Auriac, 2011). Alderfer et al. (2017) indicated in their study that young people also perceived even younger children than themselves to not be able to understand what is being asked of them - until the age of 6 years. Arguably, the current study demonstrates that very young children

are capable of making useful contributions, particularly when discussions are age appropriate. However, this might well have been due to the children's P4C skills, but it could also have been due to the topic itself. Understanding that there could be alternative ways of undertaking the intervention, such as a circle time approach, could be beneficial when thinking about scaling up. In defence of P4C methodology it is argued that "doing" (Daniel & Auriac, 2011, p. 425) P4C in the classroom can foster children's critical thinking skills through shared discussion. Providing children have sufficient 'cues' (Grigoroglou & Papafragou, 2016, p. 787) they will not be egocentric in dialogues with peers, which this methodology supports - trying to understand the development of children's thinking about difference and its aetiology. Chapter 5 indicates that if the P4C intervention is carefully scaled up and rigorously evaluated it could potentially provide a relatively affordable intervention to enhance disability awareness. However, it would need to be embedded in every school, and so may become costly. This is where potentially a hybrid P4C/circle time approach might be useful, particularly when scaling up.

As previously discussed in RQ1, although the intervention was partially successful using P4C methodology, on reflection, I believe now, that the philosophy element may not be the only approach which could provide the opportunity for children to discuss their perspectives. A circle time approach might also be appropriate and is available in all English schools through SEL (Social, Emotional Learning) interventions. SEL interventions are a range of interventions which support and develop children's social and emotional development, self-regulation and empathy (Turner et al., 2020) and have been validated in supporting skills such as attitude development, mental wellbeing, and supporting academic achievement (Durlak et al., 2011; Sklad et al., 2012; Wigelsworth et al., 2016; Corcoran et al., 2018).

Using a circle time format approach with rules for discussion (about confidentiality, no right or wrong answers, building on what others say, and giving reasons for disagreement)

would also allow for a wider recruitment of schools and thus increase the applicability of the study to a wider range of schools. All children would then be able to start intervention from the outset, as circle time is already planned within the curriculum from the earliest days of school, unlike P4C methodology, which takes a whole school approach and approximately 18 months to embed the facilitation of the sessions and for children to learn the skills needed to take part. In effect, the current study's P4C sessions highlighted that the children seemed to just appreciate the chance to learn – and this I believe could be done in multiple ways.

However, in defence of the P4C methodology, by removing the 4 Cs aspect (being creative, critical, collaborative, and caring thinking), this might not have led to children challenging each other or building on what another child had said in the sessions – developing children's higher order thinking skills (Glazzard, 2016). The main criticism of the sessions within the current study, highlighted in Chapter 5, Process evaluation, was that there was too much of a focus on practise/warm up games and only a little time spent on the key questions. P4C methodology gave the opportunity for discussion and debate to 'bounce' conversation and ideas around the circle, providing depth of conversation, rather than going around the circle (as in a circle time format). In doing this, children were motivated to take part – as they were not just waiting for their turn. Therefore, losing that element, the active ingredient' of P4C, from the sessions could make the intervention very different – and arguably less engaging for the children.

On balance, therefore, it would be interesting to compare the current intervention, in its current P4C format to a SEL, circle time, approach – evaluating the effectiveness of each. I believe only then could a decision be made regarding the effectiveness of P4C and a Circle time approach.

However, for the current study to have impact, the intervention would need to be managed by ‘keeping the materials alive and relevant’ (Maguire et al., 2019, p. 263). I also suggest that the intervention shouldn’t be a ‘one off’ occurrence – it should be repeated at intervals annually and continued throughout the primary stages of development to support children’s growing awareness and understanding of differences, ‘reduce fade-out effects’ (Sokolowski & Daniel Ansari, 2018, p. 8) and target attitudes which are harder to alter, e.g. attitudes towards behaviour differences (Fazio, 1990). Fazio (1990) suggest that given the opportunity, when children are impelled to think about attitudes, this can affect behaviours. Offering this window of opportunity for intervention to challenge categorization and stereotyping, can ultimately affect friendship development and inclusion (Gus, 2000; Cairns & McClatchey, 2013; Beckett, 2014; Armstrong et al., 2017; Black-Hawkins et al., 2021).

8.4. What I have learned by, and about, including children’s voices

The current study shows that even very young children (the youngest participants were just four years old) are capable of contributing their ideas, especially when supported by an intervention which promotes discussion and provides a platform for them to communicate their opinions (Wall, 2017).

However, in providing the children with the opportunity to express their opinions about things that affect them (UN, 2009) the children’s voices in the current study were at some points difficult to attain, particularly around gatekeeping from those who are obliged to keep children safe – but in doing so impede children from being able to give their views and perspectives (Gross-Manos et al., 2021).

Getting through the ‘layers of gatekeepers who exercise power over children’ (David et al., 2001, p. 351) was difficult from the outset, countering school and parental gatekeeping (Gross-Manos et al., 2021). Recruiting schools was difficult as they ultimately controlled

who can visit the school. And after recruitment – parental consent also had to be sought, which may have limited the children’s recruitment to the study (by parents not completing the consent form). This may have been because of parental concern that there would be detrimental effects to taking part in the study (Aldridge, 2017). Ethically it was important for the parent to opt their child into the study, rather than opting out. However, field notes indicated that consent forms had been returned after the pre-testing had begun, which meant it was too late for the children to take part in the study. My assumption is that other children, in the study, had explained that it was a fun activity, particularly the Zig and Zag characters, and children outside of the study had therefore gone back to their parents to ask to join the study. In hindsight, a possible way to get the children interested from the outset – would have been to introduce the children to characters and resources in an assembly, advertising the study to them, prior to the consent forms being sent to the parents. This, therefore, would have allowed ‘children to directly nominate for themselves the issues of importance’ (Sargeant & Gillett-Swan, 2015, p. 180).

After receiving parental consent, children were then asked to participate in the introduction of the characters Zig and Zag, reading about them through books and comics to encourage thinking and discussion about learning and behaviour differences. I then provided a pictorial sheet which outlined to the children what taking part in the study would mean for them (ie. no right or wrong answers, stop at any time and withdraw without penalty, miss out questions they don’t want to answer, confidentiality). This ensured that the very youngest of children understood what was being asked of them and could give informed assent (Alderson & Morrow, 2004).

During this point two children, one School 1 and one from School 2, who, through their visible dissent (looking upset/choosing to look away and fiddle with objects in front of them),

were asked if they wanted to re-join their classes. Their behaviours indicated to me that they were capable of making the decision to not continue in the study (Dockett et al., 2012).

Although I had attained consent from the parents, it was extremely important to observe the children's change in verbal and non-verbal assent (Bourke & Loveridge, 2014). As an experienced primary school teacher, I had noticed that the two children through their non-verbal actions did not want to continue in the study (Bourke & Loveridge, 2014).

However, on returning to the classroom, the teachers were concerned that the children were not taking part, even though the parent had consented. I explained to the teachers that it was the child's right to say no to the research and it was okay to do so. On reflection, I can see why there was 'tension' (Kirby, 2020, p. 811) between children conforming to the school's context and that of children being able to "shape who they might be and what they can do in school institutions and beyond" (Kirby, 2020, p. 813). See Chapter 3 for a Reflexivity statement about including children's voice in the current study.

Gross-Manos et al. (2021) suggest that different approaches to researching with children need to be found so that the "gatekeepers phenomena" (p. 2097) can be reduced. An alternative to researching with children in the school context could potentially be as co-researchers, asking them what is important and what they want to understand about learning and behaviour differences, using online platforms (Liddiard et al., 2019).

8.5. How the use of creative methods helped

Using creative methods such as puppets, books, comic strips and EYFS measure was extremely helpful in engaging the children within the study. Firstly, the puppets were designed to be tactile, brightly coloured and appealing to very young children and those who needed a 3D explanation of the characters. Field notes, taken during the pre-intervention introduction of the characters, indicated that the youngest children really enjoyed the

characters – particularly when holding them and hugging them before passing on to the next child. The Year 2 and Year 5 children were also engaged with the Zig and Zag characters, particularly in Year 5 where the children took great delight in explaining what Zig and Zag looked like to a child with vision impairment, who was hugging and feeling the characters, and was the only child to point out that when the characters legs and arms were moved or tapped vigorously, they made a ringing bell sound. Field notes also indicated that the children used them for reference when thinking about the questions they were being asked. This was particularly evident in EYFS where one child after being asked which character they were most like – looked closely at Zig (who they were holding) then looked closely at Zag. Both characters were virtually the same physically, so the child may have been looking ‘into’ each to see who they perceived they were most like.

In terms of the differentiated EYFS and Year 2 books and comics, these helped enormously in setting the context for the Zig and Zag characters – in a school setting, something the children know and understand. Field notes also indicate that when children in Year 5 were presented with comic strips for Zig and Zag one child commented “Did you do this? [referring to me, as the researcher], I responded “yes”, to which they responded “cool!”.

The EYFS measure was designed predominantly to reduce the need for using language to explain the children’s perspectives and reduce the amount of time children needed to be doing the research. Once the children understood that each of the emojis represented a thought or feeling, and being able to point to them, this made the process of collecting their views easier and faster to record. Field notes also show that whilst I was explaining the emojis to some of the children – they were also expressing that emoji on their faces too, indicating they understood.

8.6. Limitations of the current research

There were some limitations to the study: namely, that due to Covid 19, delayed post test data was not collected from School 2, which impacted the study's results (loss of power in the RCT). This is slightly frustrating as there is only a small amount of longitudinal research which provides pre, post and delayed post testing data effects of interventions altering attitudes (de Boer et al., 2014; Moore & Nettelbeck, 2013; Perez-Torralba et al., 2019).

Also, in School 1, diffusion of the final P4C session had occurred. The control group had completed a P4C session which focussed on empathy and being different and this is likely to have affected results (See Chapter 5 for process evaluation).

The study had a relatively limited sample size, and the recruited schools had an embedded P4C ethos and were located in a narrow geographical area. This means that findings may not be generalisable to other schools.

A potential limitation may also be the books for EYFS and Year 2 and the comic strips for Year 5. The story could be developed further to include this why this happened to Zig and Zag – and provide an explanation for the behaviours in the books, rather than leaving the children to think why.

Children's assent was a very important aspect of this study. However, this proved to also be a limitation, particularly in the transcription and analysis of the P4C sessions. Only the data from those children whose parents had consented and the children who had assented, prior to the P4C sessions, was included in the analysis of each P4C session. This meant that some of the discussions/debates recorded were not available to be used in the analysis. Ensuring the child's rights not to take part, therefore, also became a limitation in that some aspects of the conversation had to be deleted and analysis of the discussion may have been stilted.

Unfortunately, some of the limitations were out of my control, ie. Covid-19 school restrictions. The diffusion in School 1 could potentially have been avoided if there had been a ‘usual practice survey’ completed at the beginning and end of the intervention by the control groups. This would have ensured that concepts were not the same as the intervention and would have avoided the very similar work being done by the control groups – and having an impact on the post data outcomes (increasing the control group scores).

Recruiting two P4C schools to agree to take part in the study was problematic. This was due to the criteria of only asking P4C schools to participate and the limited places where I could travel to, without incurring increased personal costs. However, if the study were to be scaled up, then working with other researchers/institutions would enable a wider geographical reach.

8.7. Ideas for Future Research

The study suggested that feelings about learning differences can be changed by a short P4C intervention. The findings also indicated that attitudes towards behaviour differences had moved in a positive trend. However, these gains were lost at 12 weeks. A Small, Measurable, Achievable, Realistic, Timebound (SMART) programme of intervention, on a yearly basis re: neurodiversity and disability would need to start early and continue over subsequent years with the view to it becoming an ‘ethos’ just as P4C is embedded in the schools who agreed to take part in the study. This would hopefully ensure that the intervention effects did not decline and fail over time (Sokolowski & Ansari, 2018).

However, as previously discussed in RQ3 the intervention may not need to be explicitly taught through P4C schools but may potentially be taught through a social and emotional curriculum (SEL) to support discussion of equality, diversity and inclusive, which could potentially be much less resources intensive, and increase the amount and type of schools being able to undertake this intervention. For this to happen the P4C intervention would need

to be compared to a SEL circle time approach in order to identify if methodological changes (ie a P4C ethos compared to circle time ethos) would affect attitude development in the intervention.

Even though the intervention was very short (four weeks), it was partially successful in changing children's affective attitudes towards a character with learning differences (Zig). This supports findings that short interventions can be successful in altering attitudes (Gaad 2015; Özer et al., 2012). There is an optimal timeframe to intervene, which can have positive effects – but do fade after 12 weeks. The current study indicates that EYFS/Year 2 could be the optimal age to begin intervention around differences, and this is also reflected in the literature (Armstrong et al 2017, Bellanca & Pote 2013; Blackman et al., 2016; de Boer et al., 2014; Soulis et al., 2016). There is a need for intervention at an early age to reduce peer discrimination towards those who may not be neurotypical, and low self-esteem in adolescence (Shtayermman, 2009). Targeting young children to develop basic understanding of the aetiology of differences could impact better understanding of differences and development of friendships and make classrooms more inclusive (Bar & Bracchitta, 2012). If children understand the aetiology of differences, there is the potential for children to be empathetic towards learning and behaviour differences because they know why they happen. Understanding the differences could mean that children can develop tolerance about learning and behaviour and therefore develop acceptance through understanding that everyone is an individual.

The P4C intervention could provide a platform for hearing children's voices in relation to learning and behaviour differences and their perspectives on screening for them, and potentially other social, emotional platforms which would widen the types of schools taking part in the intervention - the next step could be to include the children's perspectives in the ongoing debate (Asbury et al., 2021). In doing so, children would need to be provided

with a platform to pass on their perspectives. Potentially, this could be through platforms such as school councils. This would mean that their perspectives about what really matters to them could be heard and passed on through the school hierarchy – and to potentially impact policy and practice around inclusion.

Future approaches, also should consider including children at the earliest points of designing intervention, as working ‘with’ children (Dockett & Perry, 2011), co-production or child/teacher input at the design stage, could enable research where “everyone was an equal part of the team on their own merit (p. 1304) ... and be about things that matter to them” (Armstrong et al. 2019, p. 1306)

The next research priority would be to build on the current findings, and potentially scale up the intervention to include further schools and reach a wider geographical area. Widening the scope of recruitment to cover all schools is particularly important, firstly for engaging all children’s voices, but also to find out their perceptions of this emotive area.

8.8. Concluding remarks

The current study outcomes indicated that children’s feelings towards Zig with learning differences were significantly more positive after this intervention than was the case for children in the control group. Children’s thoughts about Zag with behaviour differences were also showing a more positive trend after intervention, although this did not reach statistical significance. Engaging the children, by using creative and innovative (Lees et al., 2017) methods meant, therefore, that the intervention showed some potential for scaling up. It also demonstrated that shaping children’s attitudes is possible from an early age and that young children have the capacity to give their views particularly when it is meaningful to them (Gillett-Swan, 2014).

The current study aimed to work ‘with’ children as opposed to ‘on’ them (Dockett & Perry, 2011, p. 231). It engaged and listened to children’s perceptions of the idea of DNA

screening for an increased likelihood of learning or behaviour differences and used creative approaches which focussed on how children develop their understanding of complex topics such as diversity and genomic prediction. The current study could potentially be added to the high-quality science communication tools already used within education – and could be accessible from the first days of primary school (Gus, 2000; Litvak, 2011; Cairns & McClatchey, 2013; Beckett, 2014; Armstrong et al., 2017; Black-Hawkins et al., 2021). I argue that it is important, and responsible, to include children, even very young children, in consultations about what they think and feel about others who learn and behave differently to themselves. Their perspectives could potentially support and inform policy makers in their understanding of what it would mean for children, psychologically, socially, and emotionally, if their DNA were to be routinely screened to identify potential learning or behaviour differences.

APPENDIX

Appendices 1 – School 1 timetable

Primary School – timeline 2019

Week Commencing	Day	What is happening	Notes
30 Sept - 4 Oct	Monday 11.30	HT to sign school consent form Provide school with 200 consent letters for children 8 teacher consent forms	
7 Oct – 11 Oct	Mon 7 October	Reception, Year 2, Year 5 children consent letters send out	
	Mon 7 October	Reception, Year 2, Year 5 teachers to complete data sheet for children	Data sheet to <u>include</u> : Year group, name of child, gender, FSM, SEN, Superhero name (to be filled in on 1 st P4C session – intervention group only) DOB – template to be provided.
	Friday 11 October	Reception, Year 2, Year 5 children consent letters returned	
14 Oct – 18 Oct	Monday 14 October	Introduction of Zig/Zag and pre-intervention data collection with 1 x Year 2, Year 5 and Reception Class	Year 2, Year 5 – will require 40 minutes slot Reception may need the afternoon to input and take children 1-1
	Tuesday 15 October	Introduction of Zig/Zag and pre-intervention data collection with 1 x Year 2, Year 5 and Reception Class	Year 2, Year 5 – will require 40 minutes slot Reception may need the afternoon to input and take children 1-1
	Wednesday 16 October	Complete any pre-intervention data collection from EYFS	
21 Oct – 23 Oct	21/22/23 dates could be used if data collection not completed		
Half Term – 28 October to 1 November			
4 Nov – 8 Nov	Tuesday 5 November	P4C intervention groups – Reception, Year 2, Year 5	Could each group be undertaken as separate times during the day. To Audio record and observe sessions.
11 Nov – 15 Nov	Tuesday 12 November	P4C intervention groups – Reception, Year 2, Year 5	Could each group be undertaken as separate times during the day. To Audio record and observe sessions.
18 Nov – 22 Nov	Tuesday 19 November	P4C intervention groups – Reception, Year 2, Year 5	Could each group be undertaken as separate times during the day. To Audio record and observe sessions.
25 Nov – 29 Nov	Tuesday 26 November	P4C intervention groups – Reception, Year 2, Year 5	Could each group be undertaken as separate times during the day. To Audio record and observe sessions.
2 Dec – 6 Dec	Monday 2 December	Post intervention data collection with 1 x Year 2, Year 5 and Reception Class	Year 2, Year 5 – will require 20 minutes slot Reception may need the afternoon to input and take children 1-1
	Tuesday 3 December	Post intervention data collection with 1 x Year 2, Year 5 and Reception Class	Year 2, Year 5 – will require 20 minutes slot Reception may need the afternoon to input and take children 1-1
	Wednesday 4 December	Complete any post intervention data collection from EYFS	leave by 1.30 pm
12 Weeks			
2 Mar – 6 Mar	Monday 2 March	Post intervention (delayed) data collection 1 x Year 2, Year 5 and Reception Class	Year 2, Year 5 – will require 20 minutes slot Reception may need the afternoon to input and take children 1-1
	Tuesday 3 March	Post intervention (delayed) data collection 1 x Year 2, Year 5 and Reception Class	Year 2, Year 5 – will require 20 minutes slot Reception may need the afternoon to input and take children 1-1
	Wednesday 4 March	Complete any post intervention data collection from EYFS	Complete data analysis.

Appendices 2 – School 2 timetable

Primary School 2 – timeline 2019 -2020



Week Commencing	Day	What is happening	Notes
2 Dec – 6 Dec	Wednesday 4 December 2 pm	Meet with H - HT to sign school consent form Provide school with 200 consent letters for children 8 teacher consent forms	
9 Dec – 13 Dec	Mon 9 December	Reception, Year 2, Year 5 children consent letters send out	HT to send out covering letter with consent forms – highlighting firm date for sending back to school (20 th December) and that all children are eligible to take part in study (not just SEN children)
	Mon 9 December	Reception, Year 2, Year 5 teachers to complete data sheet for children	Data sheet to include: Year group, name of child, gender, FSM, SEN, DOB template to be provided.
	Friday 13 December	Reception, Year 2, Year 5 children consent letters returned	
Christmas holidays 20 December – 6 January 2020			
13 Jan – 17 Jan	Monday 13 January	Introduction of Zig/Zag and pre-intervention data collection with 1 x Year 2, Year 5 and Reception Class	Year 2, Year 5 – will require 40 minutes slot Reception may need the afternoon to input and take children 1-1
	Tuesday 14 January	Introduction of Zig/Zag and pre-intervention data collection with 1 x Year 2, Year 5 and Reception Class	Year 2, Year 5 – will require 40 minutes slot Reception may need the afternoon to input and take children 1-1
	Wednesday 15 January	Complete any pre-intervention data collection from EYFS	Dec to discuss with intervention teachers planning sheets provided.
20 Jan – 24 Jan	Tuesday 21 January: This date is a suggested date for the week. There is flexibility of the day chosen during the week for the intervention groups to undertake the intervention sessions. Control groups may do their sessions at any time during the week.	P4C intervention groups – Reception, Year 2, Year 5	Could each group be undertaken as separate times during the day. To Audio record and observe sessions.
27 Jan – 31 Jan	Tuesday 28 January: This date is a suggested date for the week. There is flexibility of the day chosen during the week for the intervention groups to undertake the intervention sessions. Control groups may do their sessions at any time during the week.	P4C intervention groups – Reception, Year 2, Year 5	Could each group be undertaken as separate times during the day. To Audio record and observe sessions.
3 Feb – 7 Feb	Tuesday 4 February: This date is a suggested date for the week. There is flexibility of the day chosen during the week for the intervention groups to undertake the intervention sessions. Control groups may do their sessions at any time during the week.	P4C intervention groups – Reception, Year 2, Year 5	Could each group be undertaken as separate times during the day. To Audio record and observe sessions.
10 Feb – 14 Feb	Tuesday 11 February: This date is a suggested date for the week. There is flexibility of the day chosen during the week for the intervention groups to undertake the intervention sessions. Control groups may do their sessions at any time during the week.	P4C intervention groups – Reception, Year 2, Year 5	Could each group be undertaken as separate times during the day. To Audio record and observe sessions.
Half term – Mon 17 February to Friday 21 February			
24 Feb – 28 Feb	Monday 24 February	Post intervention data collection with 1 x Year 2, Year 5 and Reception Class	Year 2, Year 5 – will require 20 minutes slot Reception may need the afternoon to input and take children 1-1
	Tuesday 25 February	Post intervention data collection with 1 x Year 2, Year 5 and Reception Class	Year 2, Year 5 – will require 20 minutes slot Reception may need the afternoon to input and take children 1-1
	Wednesday 26 February	Complete any post intervention data collection from EYFS	
12 Weeks			
18 May – 22 May	Monday 18 May	Post intervention (delayed) data collection 1 x Year 2, Year 5 and Reception Class	Year 2, Year 5 – will require 20 minutes slot Reception may need the afternoon to input and take children 1-1
	Tuesday 19 May	Post intervention (delayed) data collection 1 x Year 2, Year 5 and Reception Class	Year 2, Year 5 – will require 20 minutes slot Reception may need the afternoon to input and take children 1-1
	Wednesday 20 May	Complete any post intervention data collection from EYFS	Complete data analysis.

Appendices 3 – School Invitation Letter



Monday 30 September 2019

Dear [anonymised]

Who Am I? The effect of being labelled or identified as being 'at risk' of learning difficulties on the identities of children with (and without) SEND.

My name is Diana (Dee) Fields and I am carrying out a series of studies of children's perceptions of SEND for my PhD in Psychology in Education at the University of York. I am also an experienced primary school teacher, SENCO and Child Protection Officer with a full DBS check. I am writing to invite your school to take part in a study of how well children understand formal and informal educational labels and if their understanding and tolerance of learning and behaviour differences can be improved by a short Philosophy 4 Children (P4C) intervention?

We have approached [anonymised] as a school with a [] in SAPERE's Philosophy for Children programme. It is important to the study that teachers and children are already familiar with P4C. If you consent to the school's participation, we will invite children from Reception, Year 2 and Year 5 to take part, with their parents' consent and their own assent.

What would this mean for the child(ren) in the school?

All children participating in the study will be asked to provide data before and after a series of four P4C sessions. I will introduce the children individually to two puppets – Zig, who struggles with learning, and Zag who struggles with ~~behaviour~~ - and will ask Reception children to choose words that describe Zig and Zag and to answer some questions regarding their choices. Children in Years 2 and 5 will be asked to complete a questionnaire measure about their perceptions of disability using ~~ipads~~ in groups.

After initial data collection one class from each of these three year groups will be selected to be an intervention group while the other class will be the control group. Both groups will have a weekly P4C session with their class teacher. I would like to be present to observe and audio-record the intervention sessions but will not take part. The control group will cover whatever the teacher had planned for them (or materials on the environment can be provided for four sessions) while the intervention group will participate in four P4C sessions focused on perceptions and tolerance of differences and disabilities. Detailed session plans, in SAPERE style, will be provided for the class teacher and training on these sessions can also be provided on request.

After the four sessions children will be asked to answer the same questions they answered before the intervention. Also, in order to explore whether any effects are maintained, I will return to school 3 months later to ask the same questions again, at a time that is convenient for you and the children. All children who participate in the research will receive a Research Assistant certificate in thanks for their help.

What would this mean for the teachers in my school?

Reception, Year 2 and Year 5 teachers will be asked to participate. However, if regular P4C sessions are already taking place in class we hope any disruption will be very limited. One class in each year group (the control groups) will follow the plans the teachers already had for them (or the teachers can choose to follow four sessions on the environment provided by us). Intervention group teachers will be provided with four P4C sessions focusing on attitudes and tolerance towards difference and disability. Training can be provided on request. After completion of the study, the intervention P4C sessions will be made available to the control group teachers. In addition, Reception teachers would be asked to facilitate pre- and post-testing which will involve, for Reception children, finding a place for me to speak with children individually and a time which will ensure this is not disruptive to the child or the class.

How will the study data be stored and used?

Children in the intervention group will be asked to pick a superhero name and will be referred to by this name within P4C sessions to maximise confidentiality from the outset. Recorded sessions will subsequently be transcribed and any anonymization required will happen at this point. Parents and children can withdraw from the study at any time during the data collection period. Anonymised data will be accessed by myself, my supervisor (Dr Kathryn Asbury) and members of our research group, the GOALS lab (under careful supervision). Children’s data will be stored by code number, and any identifiable information will be stored separately from the data and destroyed after three months. The recordings and anonymised transcripts of intervention P4C sessions will be stored in password-protected files during the life of the project. The anonymised data will be kept for three years after which time it will be stored indefinitely in the Research Data Archive York and may be used in future research. The results of the study may be shared for research or training purposes but children, parents and teachers will not be identified individually. Participation in this project is completely voluntary. You have the right to withdraw your school from participation at any time, without penalty, and you may contact us to withdraw the data from the project at any time.

We hope that you will agree to your school taking part. If you have any questions about the study that you would like to ask before giving consent, please feel free to contact Diana Fields (df802@york.ac.uk) or Kathryn Asbury (kathryn.asbury@york.ac.uk) or the Chair of Ethics Committee (education-research-administrator@york.ac.uk).

I have read and understood the information given to me about the study and give my permission for
..... (Name of school) to take part.

Signed (Headteacher)

Print Name.....

Signed (Researcher)

Print name..... (Date)

Appendices 4 – Parent Consent Letter



Dear Parent(s)/Carer(s),

Who Am I? The effect of being labelled or identified as being 'at risk' of learning difficulties on the identities of children with (and without) SEND.

My name is Diana (Dee) Fields and I am carrying out a series of studies of children's perceptions of Special Educational Needs for my PhD in Psychology in Education at the University of York. I am also an experienced primary school teacher, SENCO and Child Protection Officer with a full DBS check. I am writing to invite your child to take part in a study of how well children understand formal and informal educational labels and if their understanding and tolerance of learning and behaviour differences can be improved by a short Philosophy 4 Children (P4C) intervention?

We have approached [anonymized] Primary as a school with a in SAPERE's Philosophy for Children program. It is important to the study that teachers and children are already familiar with P4C. Children from Reception, Year 2 and Year 5 are being invited to take part within the study.

What would this mean for your child?

All children participating in the study will be asked to provide data before and after a series of four P4C sessions. I will introduce the children individually to two puppets – Zig, who struggles with learning, and Zag who struggles with behaviour - and will ask Reception children to choose words that describe Zig and Zag and to answer some questions regarding their choices. If your child is in Year 2 or Year 5 they will also be asked to answer some questions about their perceptions of disabilities and learning needs using ipads.

After initial data collection one class from each of these three year groups will be selected to be an intervention group while the other class will be the control group. Both groups will have a weekly P4C session with their class teacher. I will be present to observe and audio-record the intervention sessions but will not take part. The control group will cover whatever the teacher had planned for them (or materials about the environment that we will provide) while the intervention group will participate in four P4C sessions focused on perceptions and tolerance of differences and disabilities.

After the four sessions your child be asked to answer the same questions they answered before the intervention. Also, in order to explore whether any effects are maintained, I will return to school 3 months later to ask the same questions again. All children who participate in the research will receive a Research Assistant certificate in thanks for their help.

What would this mean for me?

You would be asked to talk with your child about taking part in the study, only completing the consent form if you (and your child) are willing. Data will be stored by code number, and any identifiable information will be stored separately from the data and destroyed after 3 months. Anonymised data will be stored for 3 years after the end of the study and then archived at Research Data Archive York.

Confidentiality

Children in the intervention group will be asked to pick a superhero name and will be referred to by this name within P4C sessions to maximise confidentiality from the outset. Recorded sessions will subsequently be transcribed and any anonymization required will happen at this point. Parents and children can withdraw from the study at any time during the data collection period. Anonymised data will be accessed by myself, my supervisor (Dr Kathryn Asbury) and members of our research group, the GOALS lab (under careful supervision). Children's data will be stored by code number, and any identifiable information will be stored separately from the data and destroyed after three months. The recordings and anonymised transcripts of intervention P4C sessions will be stored in password-protected files during the life of the project. The anonymised data will be kept for three years after which time it will be stored indefinitely in the Research Data Archive York and may be used in future research. The results of the study may be shared for research or training purposes but children, parents and teachers will not be identified individually. Participation in this project is completely voluntary. You have the right to withdraw your school from participation at any time, without penalty, and you may contact us to withdraw the data from the project at any time.

We hope that you will agree to your school taking part. If you have any questions about the study that you would like to ask before giving consent, please feel free to contact Diana Fields (df802@york.ac.uk) or Kathryn Asbury (kathryn.asbury@york.ac.uk) or the Chair of Ethics Committee (education-research-administrator@york.ac.uk).

Please return the form enclosed to your child's class teacher **as soon as possible** if you are happy for your child to participate.

Thank you for taking the time to read this information.

With best wishes,

Diana (Dee) Fields

Parent/Carer Consent Form

Please initial the boxes below if you are happy for your child to take part in the study is to 'can a short P4C intervention change how children perceive others with special educational needs, and can the effects be maintained over time?'

Please initial box

I confirm that I have read and understood the information explaining the above project and have had the opportunity to ask questions about the project.

I understand that participation is voluntary and have the right to withdraw my child from participation at any time during data collection, without penalty.

I understand that any information gained will be kept strictly confidential. All information will be anonymised and names will be removed from any materials. I understand that names will not be linked with the research materials, and that individuals will not be identified or identifiable in any reports that result from the research. Children's data will be stored by code number, and any identifiable information will be stored separately from the data and destroyed after 3 months.

The data will be kept for three years after which time it will be archived indefinitely at Research Data Archive York and potentially used in future research.

The results of the evaluation may be shared for research or training purposes but children will not be identified individually. I give permission for members of the GOALS group at the University of York to have supervised (by me) access to the data.

If information gathered raises concerns about a child's safety or the safety of others, or about other concerns as perceived by the researcher, the researcher will pass on this information to the Safeguarding Lead. In this case the Safeguarding lead of [anonymised] Primary which is [anonymised] Head Teacher or Deputy Safeguarding leads, [anonymised] and [anonymised].

I agree that the research team may audio record assessment and P4C sessions with my child and may use these recordings for analysis purposes only.

I agree for my child _____ to take part in the above study.
(child's name)

Date _____

Signature (Parent/Carer) _____

Print Name (Parent/Carer) _____

Appendices 5 – Exemplar Session Planning, 1

PLEASE USE AS GUIDANCE

Adapted from Early Years/Foundation Stage – Sara Stanley SAPERE Handbook to accompany the Level 1 P4C Foundation Course (5th Edition), 2016

<p>Title Session 1</p>	<p>'What Makes Me, Me?'</p> <p>Original Session 1: Why I chose my super-hero name? It seems to get at differences to be proud of and could lead onto a discussion of differences that are less appealing?</p> <p>New</p> <p>What does my super-hero label say about me?</p>
<p>Stimulus Stimulus details</p>	<p>Don't Call me Special</p> <p>Reading Don't Call Me Special Think about: What are you good at? What do you find difficult?</p> <p>Deciding on super-hero name Think about the story. What has it shown you? What strengths do the children have? Are they the same as yours?</p> <p>Think about yourself – what is your superhero name? Think: What can I do? What do I like to do? What does it say about you to everyone else? (Kind, caring, thoughtful, funny, helper, strong, listener etc.)</p> <p>Adults to model choosing and writing super-hero name for themselves. Super-hero names of adults to be used within 4 P4C sessions.</p> <p>Children to write superhero name on special badge using pens, pencils (to use for each P4C session). Adult to support Reception children where applicable.</p>
<p>Year Group</p>	<p>Reception/Year 2/Year 5</p>
<p>Skill focus</p>	<p>First thoughts: Clarifying ideas</p>
<p>Thinking focus</p>	<p>How do I label myself?</p>
<p>Preparation</p>	<p>Read Don't call me special. Provide pens/ Name cards for children to write their superhero name on (like table name)</p> <p>Year 2/Year 5 Warm up activity: pass the beanbag, child calls name of person going to throw to – getting faster (focussing on listening skills)</p>
<p>Presentation</p>	<p>This activity could be done in small groups of 5 or 6 children or as whole class activity (split into two groups for Reception – to reduce waiting time within group discussion)</p>
<p>Conversation and Thinking time</p>	<ul style="list-style-type: none"> • Think why chosen name • what strengths it shows about individuals (what they can do best) • does the name show what each child can do? • Are the ideas the same as someone else's or different? • How do the children feel about this? • What if I disagree with someone else's super-hero name? • What if someone challenges my super-hero name? • How do I feel about this? • Should we all have the same powers?
<p>First words</p>	<ul style="list-style-type: none"> • Would it matter if the super-hero didn't have arms? <u>Eyes?</u> legs? <p>Moved differently, think differently, behave differently?</p>

	<ul style="list-style-type: none"> • Should each super-hero look and be the same? <p>Allow children to express their ideas about what makes a 'perfect' super-hero.</p> <ul style="list-style-type: none"> • Is there a perfect person?
Building	<ul style="list-style-type: none"> • Introduce the idea that the super-hero name chosen might not be accepted by the group? • Can the children suggest some reasons why this might happen? • Could the children suggest ways they could 'fix' this super-hero so that it was 'perfect'? • Discuss.
Last words	Do the children think there can ever be the perfect super-hero or is it okay to make mistakes or be different?
Questions for Facilitator to reflect on	<p>Were all the children able to participate and contribute their ideas and suggestions?</p> <p>Were children able to discuss whether physical difference makes a person incomplete or not?</p> <p>Were children able to develop thinking to think about behaviour?</p>

Appendices 6 – Exemplar Session Planning, 2

PLEASE USE AS GUIDANCE

Title Session 2	<p>'Differences'</p> <p>Original Session 2: What is it like to be different? or similar? What is like to know someone who is different? (perception of others)</p> <p>New-</p> <p>Session 2: What is it like to know someone who is different – does it matter if others think or act differently?</p>
Stimulus	Story: Isaac and His Awesome Asperger's <u>Super Powers</u>
Stimulus details	Reading story: What questions would children like to generate
Year Group	Reception/Year 2/Year 5
Skill focus	Identifying different perspectives
Thinking focus	What is difference?
Preparation	<p>Reception Read story</p> <p>Warm up: Year 2/Year 5 Stand up – Sit down – series of questions about appearance/behaviour (likes/dislikes, hair colour/height/clothing) etc.</p>
Presentation	This activity could be done as whole class activity (split into two groups for Reception – to reduce waiting time within group discussion)
Conversation and Thinking time	<p>Do you know of anyone who may have these super-powers?</p> <p>How does it make you feel if someone tells you something about yourself that you do not want to hear? Are they being rude? Can they help it?</p> <p>Would you feel worried about being a friend with someone with these differences?</p>
First words	What did you notice in the story that was the same (as you) or different?
Building	Does it matter that Isaac thinks and acts differently? Discuss
Last words	Allow time for reflection on 'what I learnt from the enquiry, and how it could change what I think or do'.
Questions for Facilitator to reflect on/follow up activity	How well did the children listen and whose ideas were appreciated in particular?

Appendices 7 – Exemplar Session Planning, 3

PLEASE USE AS GUIDANCE

<p>Title Session 3</p>	<p>'Knowing and loving someone who is different'</p> <p>Original</p> <p>Session 3: What does it feel like to be different?</p> <p>New</p> <p>Session 3: What is it like to know and love someone who is different? (perceptions of others).</p>
<p>Stimulus</p>	<p>Reception/Year 2 We'll Paint the Octopus Red</p> <p>Year 5 Views from Our Shoes: Growing Up with a Brother or Sister with Special Needs</p>
<p>Stimulus details</p>	<p>Reception/Year 2 Finding out what disability is Learning how people deal with their disabilities to live happy and full lives. Glossary of definitions included.</p> <p>Year 5 Personal experiences of children with siblings who have a brother or sister with a disability – explained from their view point (child's voice). Glossary of definitions included.</p>
<p>Year Group</p>	<p>Reception/Year 2/Year 5</p>
<p>Skill focus</p>	<p>Connecting</p>
<p>Thinking focus</p>	<p>Value of meaning-making through linking</p>
<p>Preparation</p>	<p>Reception Read story</p> <p>Warm up: Year 2/Year 5 Big Question: What does a name (not) tell you about a person? Think Pair Share, Discuss.</p>
<p>Presentation</p>	<p>This activity could be done as whole class activity (split into two groups for Reception – to reduce waiting time within group discussion)</p>
<p>Conversation and Thinking time</p>	<p>Reception/Year 2 Read We'll Paint the Octopus Red Do you know anyone with a disability outside of school? (think about people like Steven Hawking, Stevie Wonder, Franklin Roosevelt, Tanni Grey-Thompson (para Olympian etc). In your wider community/family? What things are they good at? What do you think they find difficult? What are you good at? What do you find difficult? Does it matter that some people will live different lives, have different abilities?</p> <p>Year 5 Read Views from Our Shoes – Anne Meade, aged 14, pg. 75 (present as large A3 sheet/use visualizer) Do you know anyone with a disability outside of school? (think about people like Steven Hawking, Stevie Wonder, Franklin Roosevelt, Tanni Grey-Thompson (para Olympian etc). What things are they good at? What do you think they find difficult?</p>

	<p>What are you good at? What do you find difficult? How would you support someone who was different? What could you do?</p>
First words	<p>Reception/Year 2 What kinds of disabilities do you know about? Can you think of some types of equipment (like glasses to help a person see) that help people with <u>disabilities</u>? What do you think about others with disabilities? Would you like to be helped all the time? Or do you like to have a go yourself? Do you think a disabled person might feel the same? What could you do to 'help' someone who is disabled? (ask them if they need help before just doing)</p> <p>Year 5 What kinds of disabilities do you know about? Can you think of some types of equipment (like glasses to help a person see) that help people with disabilities? What do you think about others with disabilities? Would you like to be helped all the time? Or do you like to have a go yourself? Do you think a person with a disability might feel the same? What could you do to 'help' someone who has a disability? (ask them if they need help before just doing) Would you pity/feel sorry for someone like Annie?</p>
Building	<p>Reception/Year 2 How do you think some children feel about their disabilities?</p> <p>Year 5 How do you think Anne feels about her brother and his disability? How does it affect her and her family? Is she right to get anger/upset with her brother?</p>
Last words	<p>Reflect on discussion – what have the children enjoyed about the discussion (Reception/Year 2 ... I enjoyed the session because, I listened well to the other children's ideas I could think of my own ideas I changed my view because ...)</p> <p>Year 5 How well did we listen and whose ideas did we appreciate in particular? How, if at all, have individual members been affected in terms of their viewpoints and opinions?</p>
Questions for Facilitator to reflect on	<p>Reception/Year 2 Follow up with other stories such as Arnie and the New Kid</p> <p>Year 5 In pairs and small groups – reflect on attitudes and tolerance of disability in society.</p>

Anne Meade, 14

Hello, my name is Anne Meade and I have a twelve-year-old brother named Michael. He has cerebral palsy. Some people may think having a brother with a disability is fun but it's not all fun and games! Oh, sure, it's great when I can yell at him and he can't yell back or when my family waits in line at a historical place and we get to go to the front of the line to use the lift.

But there are some bad things, too. Like when he can't tell me what's wrong, or when people stare at him, or when he doesn't understand when we want him to do something.

Life is sometimes frustrating for the whole family. Sometimes I wonder what my brother is thinking. When he yells, is it a cry of pain or anger or maybe even joy? I get jealous sometimes – I think everybody with a disabled sibling does. So much money is spent on his equipment, but when I want something, I have to use my own baby-sitting money. I understand why he can't buy his own things but it still makes me mad.

I lead a pretty normal life. All my friends love my brother. If I was friends with somebody who didn't like him, I don't know if I would be friends with them anymore. When I baby-sit my brother, sure I may have to change a diaper (nappy) or two but it's really easy.

Usually, innocent little me, I take over the TV but when his crying becomes intolerable, I usually change the channel.

To end this, I just want to tell all people, young and old, to please resist the urge to stare at people who have disabilities. I do sometimes but after a while, I regret it. And don't take pity on my family! We are normal! Just because my brother has cerebral palsy doesn't mean we are aliens or anything! We have feelings, a brain, and a heart just like every other person in this world. So does my brother!

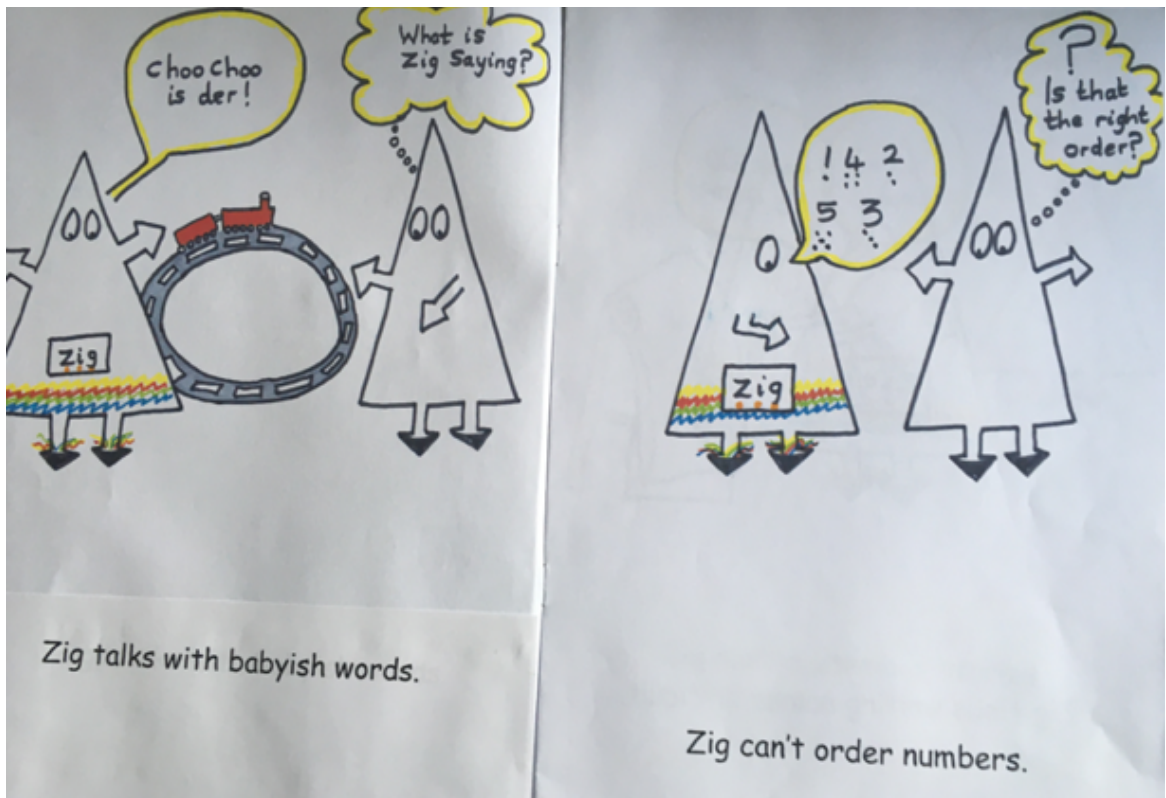
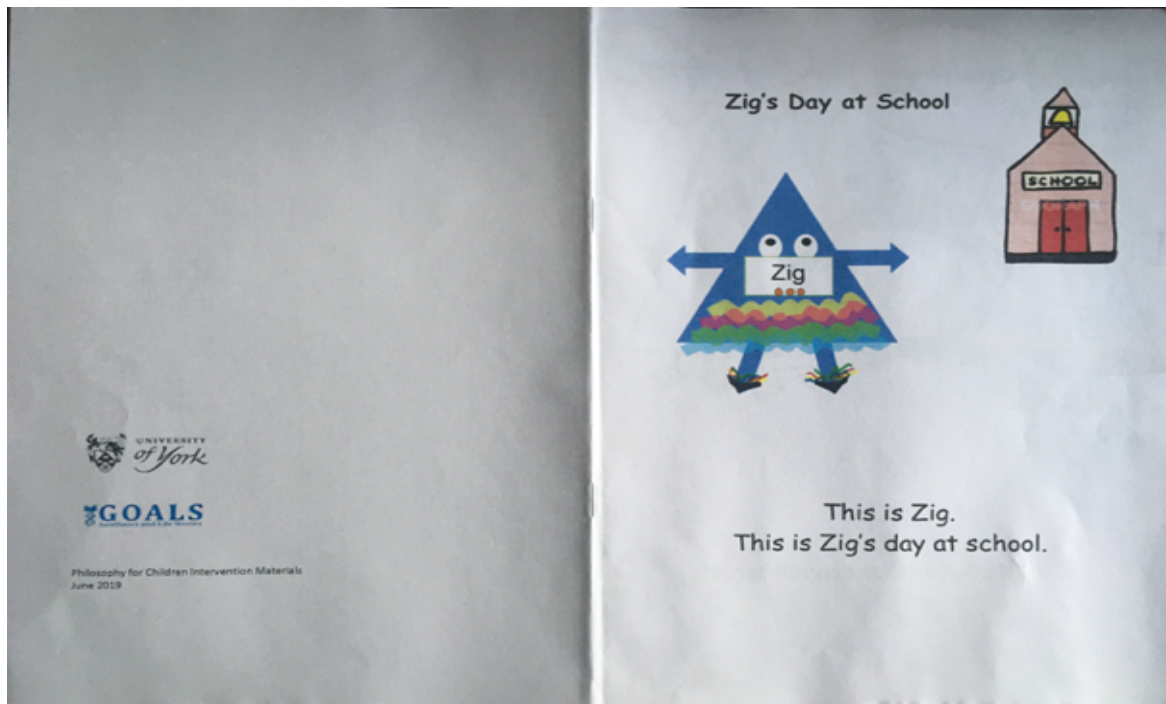
Anne lives in Sanford, Maine, where she likes to ride horses and hang out with her friends.

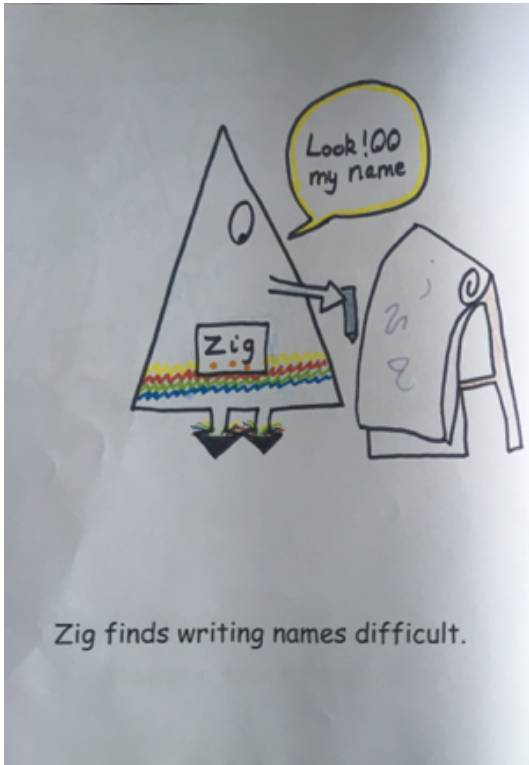
Appendix 8 – Exemplar Session Planning, 4

PLEASE USE AS GUIDANCE

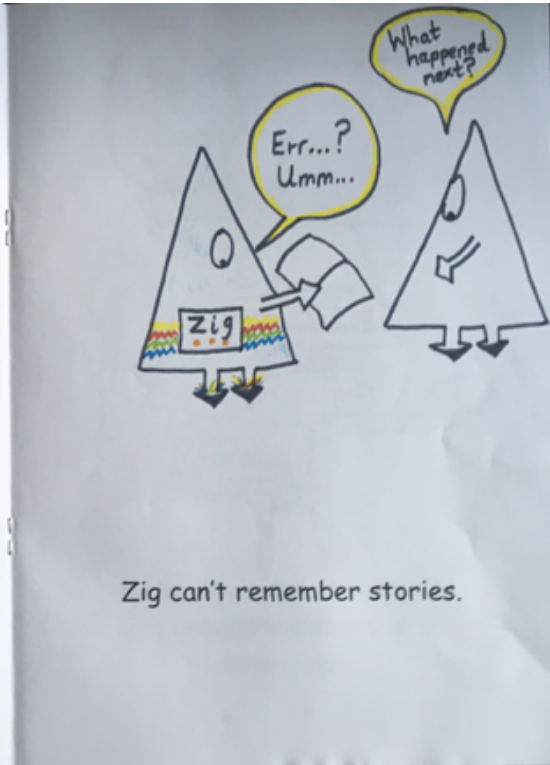
<p>Title Session 4</p>	<p>'Differences from the inside or outside?'</p> <p>Original</p> <p>Session 4: Why are some people different? (nature or nurture). Explore causes of difference and free choice in how you behave (e.g. something inside you?)</p> <p>New</p> <p>Session 4: Are babies different to each other when they are born or do they become different growing up?</p>
<p>Stimulus</p>	<p>BBC Teach – PSHCE KS2: Same but Different What is the same/different about the sisters? Why are some people different? What do you think causes people to be different/learn differently/behave differently?</p>
<p>Stimulus details</p>	<p>BBC Teach programme (7 minutes long approx.) Down's Syndrome – Alexandra's Story Records the views of all three siblings.</p>
<p>Year Group</p>	<p>Year 2/Year 5</p>
<p>Skill focus</p>	<p>Using Reasons</p>
<p>Thinking focus</p>	<p>Valuing the use of reasons to support suggestions</p>
<p>Preparation</p>	<p>Reception Watch YouTube video of Same but Different Warm up: Year 2/Year 5 Big Question: Can a person be perfect? Think Pair Share, Discuss.</p>
<p>Presentation</p>	<p>This activity should be done as whole class activity to watch the video clip (Reception could be split into two groups for discussion time – to reduce waiting time within group)</p>
<p>Conversation and Thinking time</p>	<p>Reception/Year 2/Year 5 What did you notice about the video clip? (sisters were happy, enjoying life and activities) What was the same about the sisters? What was different? What do you think caused the sisters to be different? Do you think their activities makes them different/similar? What do you think the sisters think and feel about each other?</p>
<p>First words</p>	<p>Do you know anything about Alexandra's disability?</p>
<p>Building</p>	<p>Explore causes of difference and free choice in how you learn/behave (e.g. something inside you?)</p>
<p>Last words</p>	<p>Reflect on discussion – what have the children enjoyed about the discussion (Reception/Year 2 to use smiley cards ... I enjoyed the session because, I listened well to the other children's ideas I could think of my own ideas I changed my view because ...) Year 5 How well did we listen and whose ideas did we appreciate in particular? How, if at all, have individual members been affected in terms of their viewpoints and opinions?</p>
<p>Questions for Facilitator to reflect on</p>	<p>What will you think/do when you work with someone who is different?</p>

Appendices 9 – Zig EYFS book

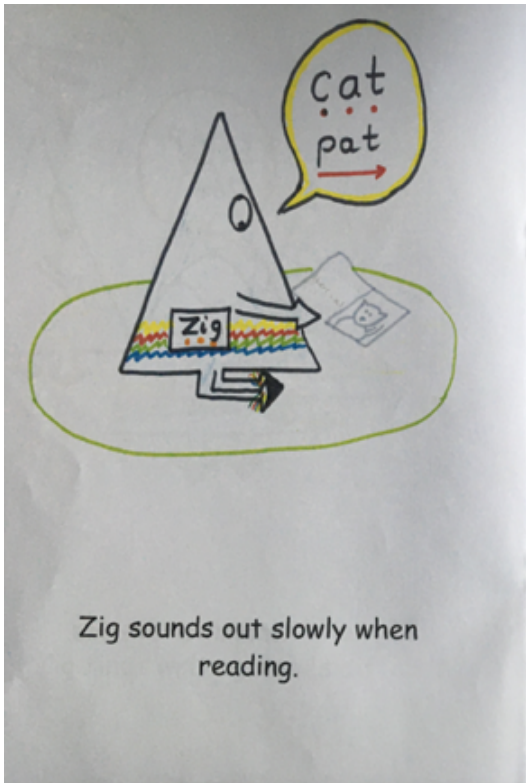




Zig finds writing names difficult.



Zig can't remember stories.

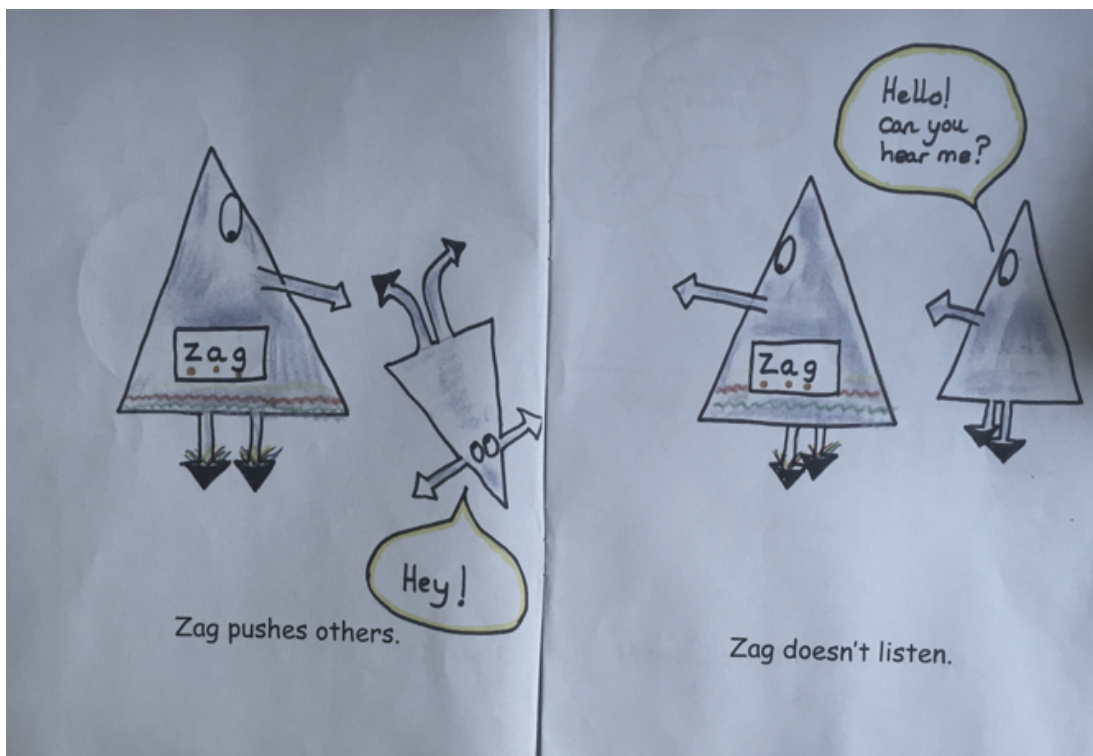
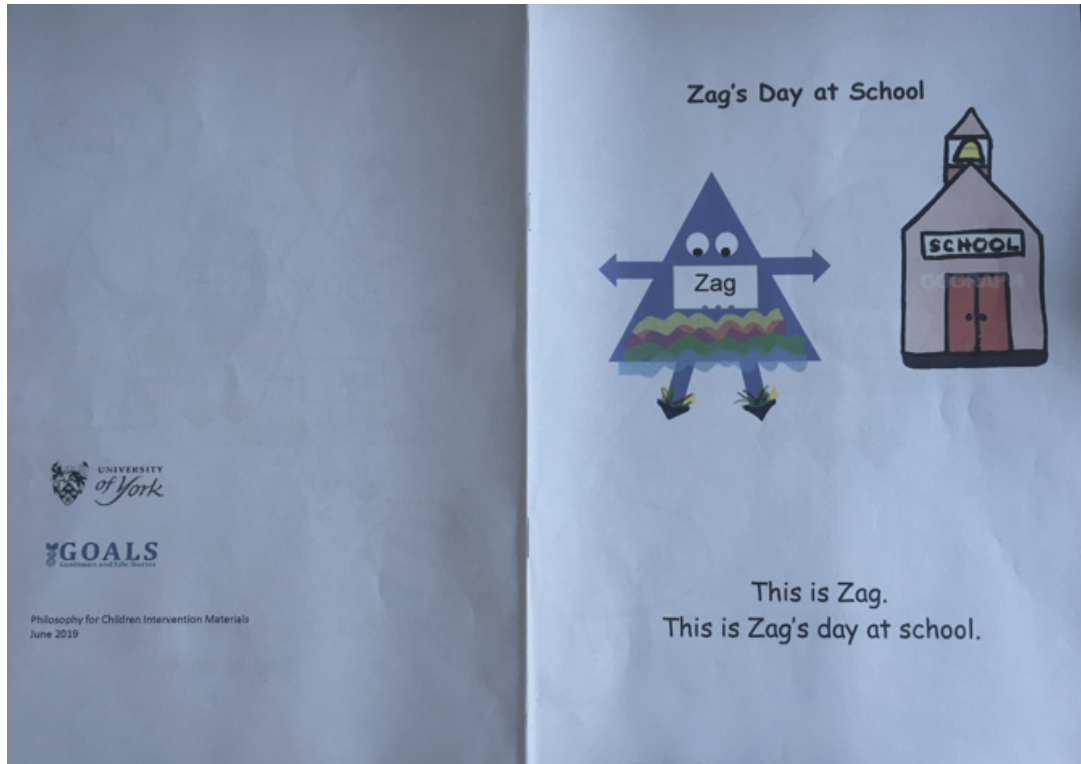


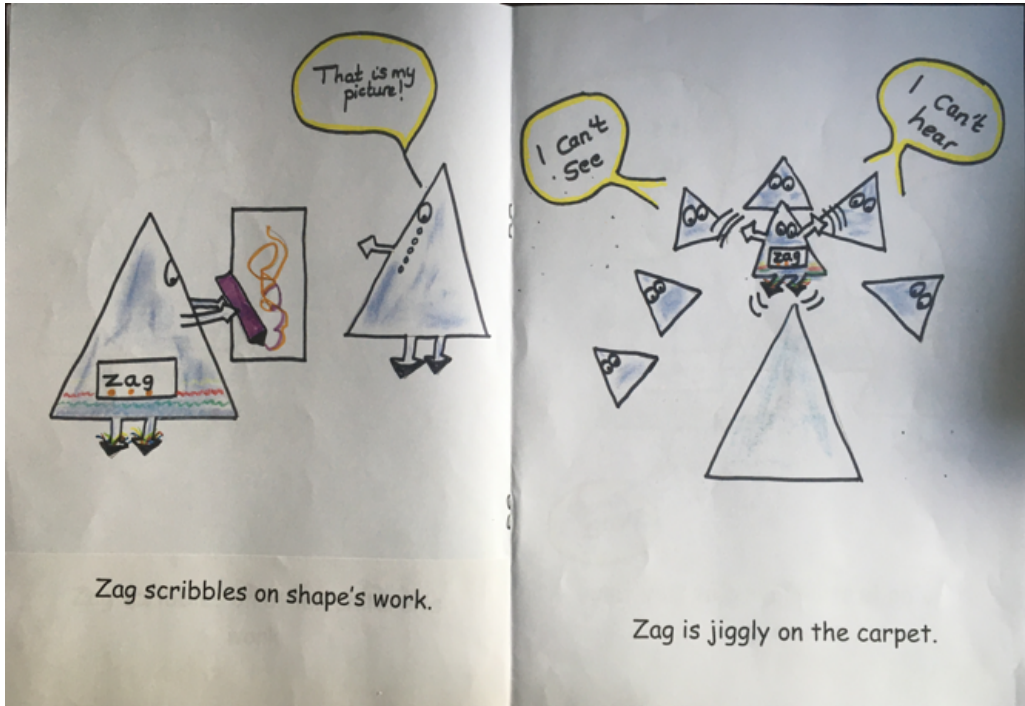
Zig sounds out slowly when reading.



Zig doesn't understand the instructions.

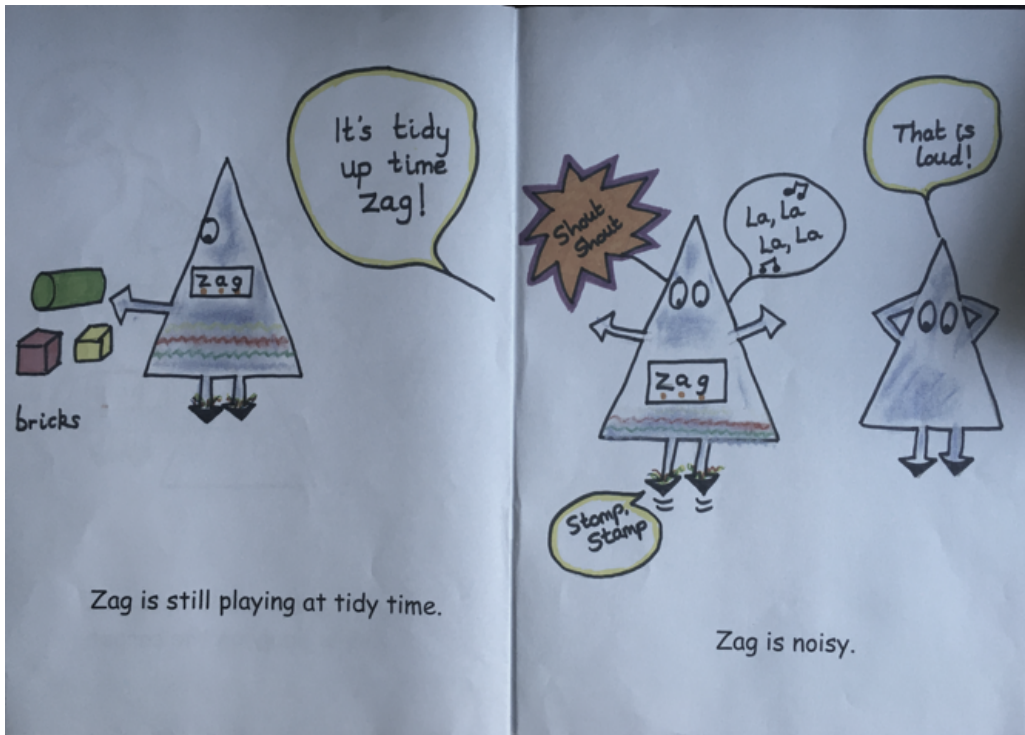
Appendices 10 – Zag EYFS book





Zag scribbles on shape's work.

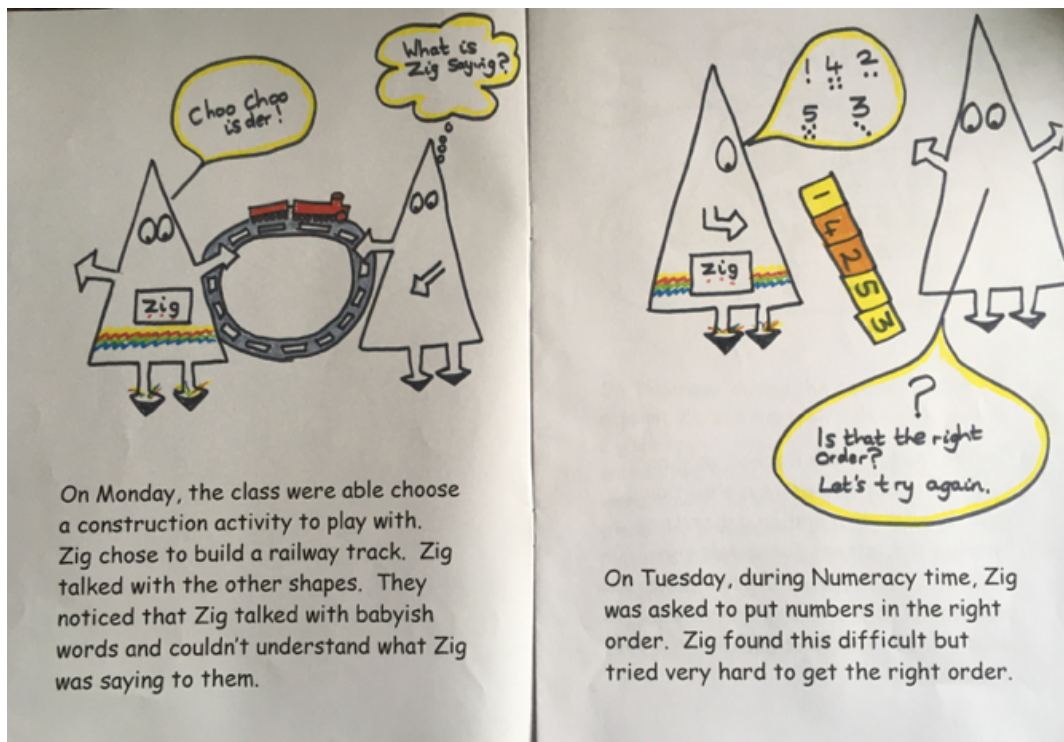
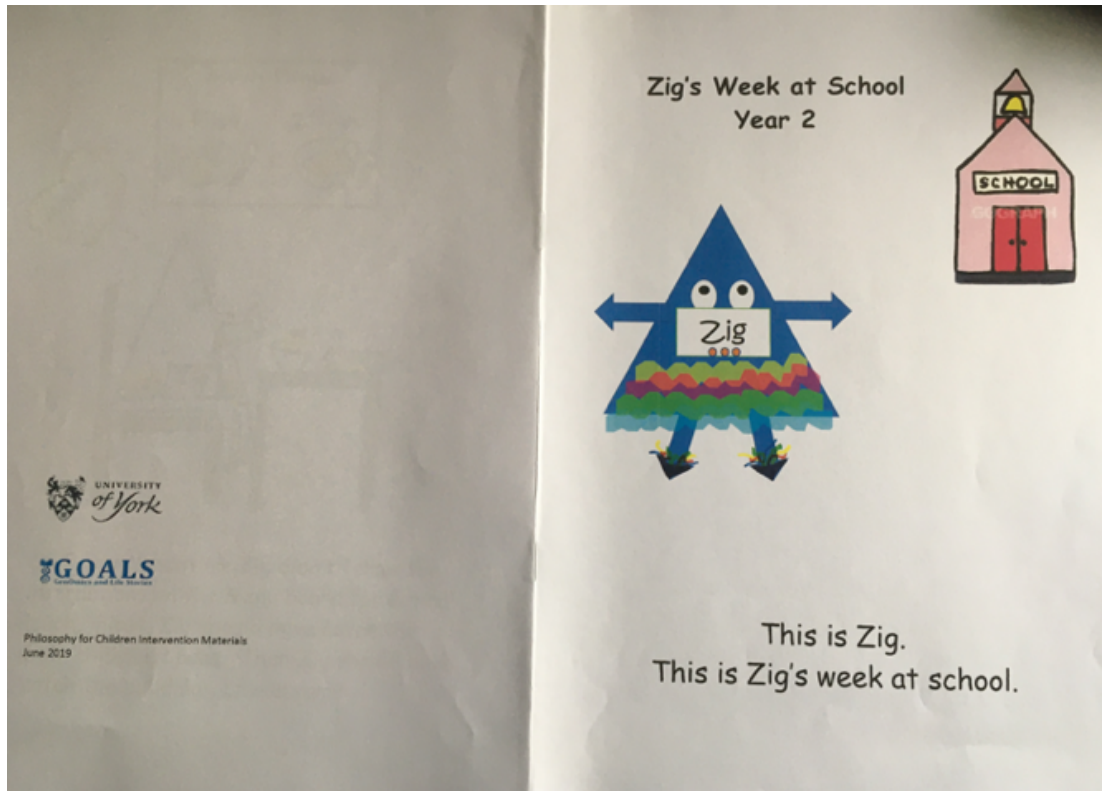
Zag is jiggly on the carpet.



Zag is still playing at tidy time.

Zag is noisy.

Appendices 11 – Zig’s Week at School – Year 2 book

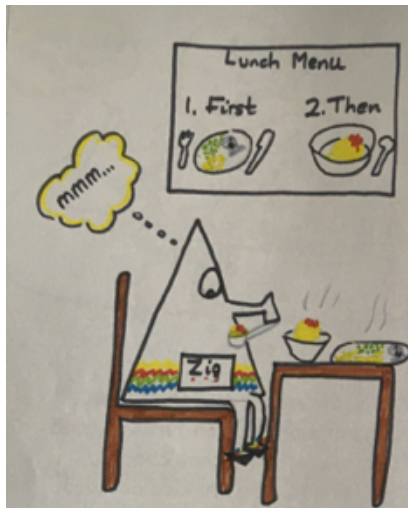




On Wednesday, Zig worked very hard to think about and write a traditional tale. Zig found sounding out and forming the letters for words very difficult, which meant Zig was slow. Sometimes Zig can forget what the ideas were in the first place!

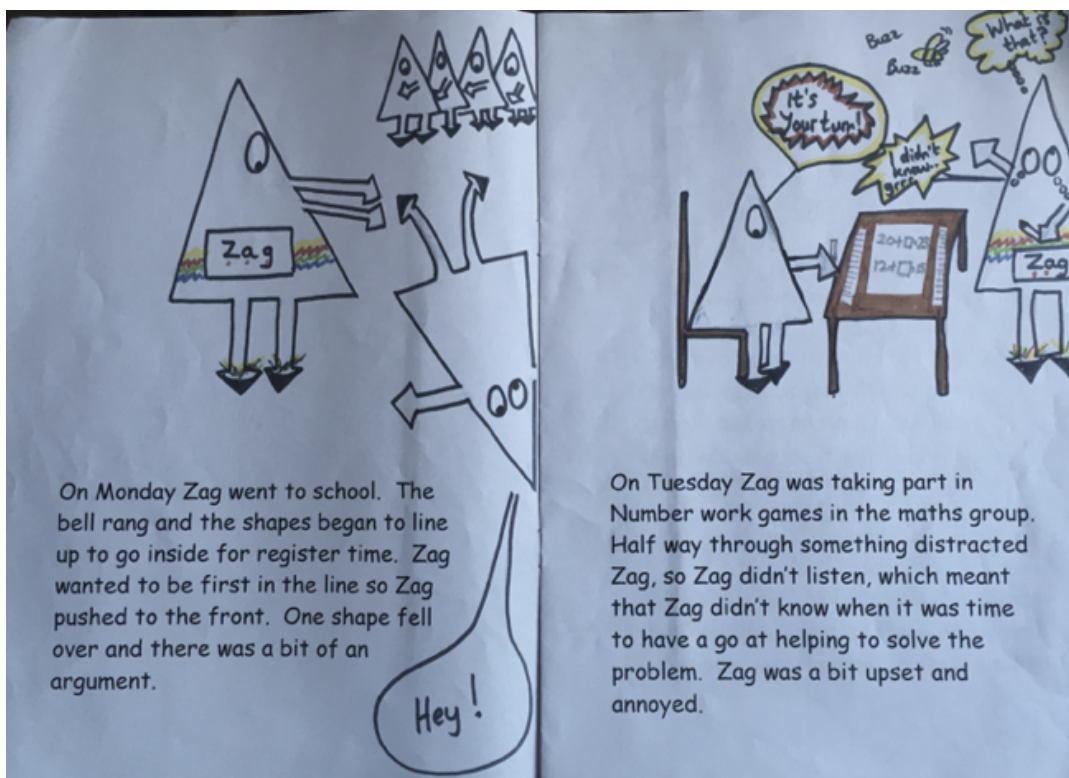
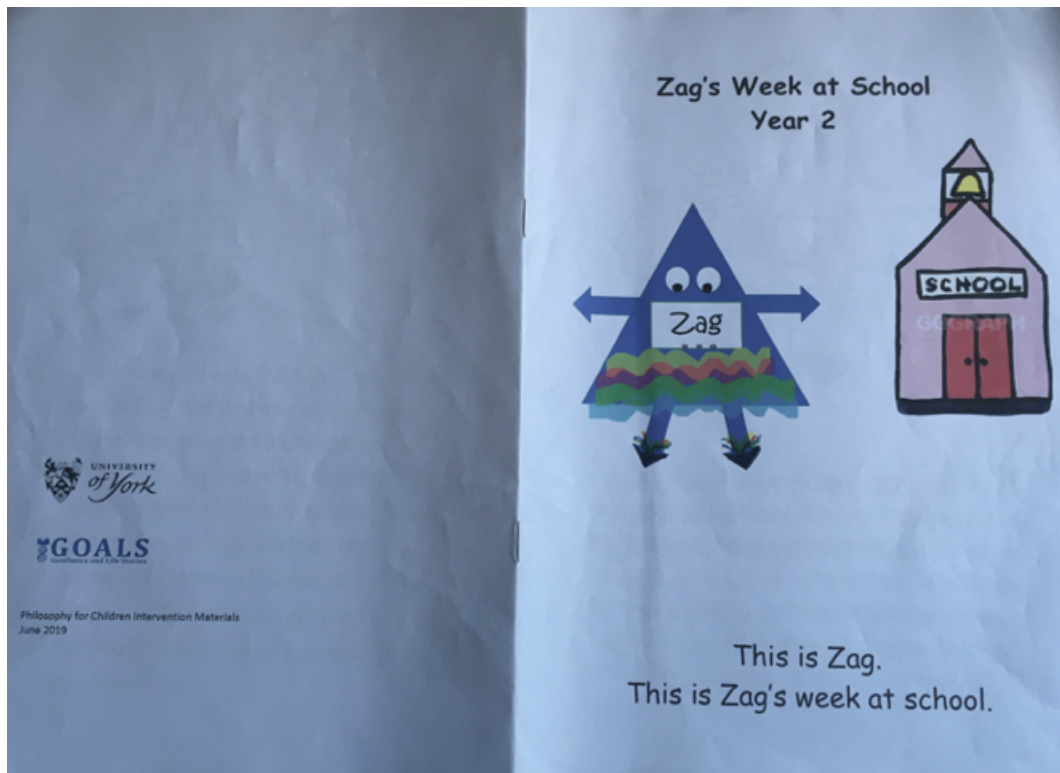


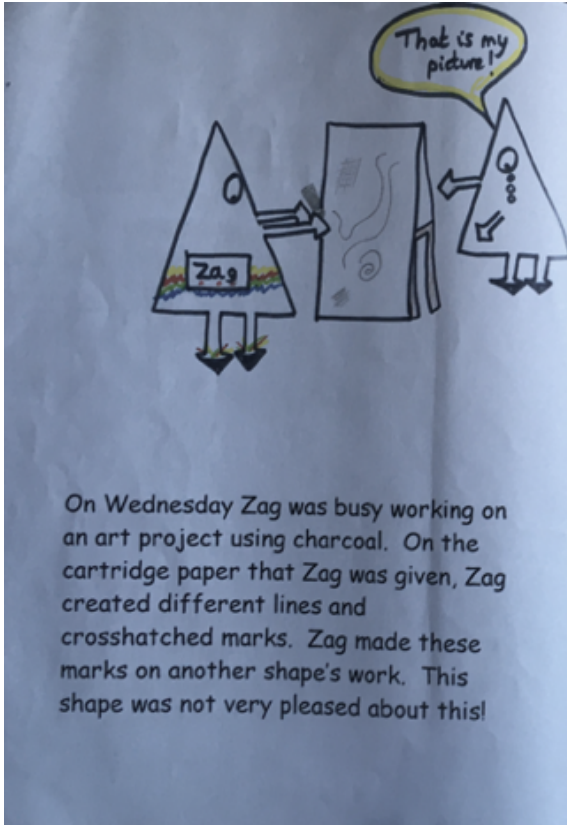
On Thursday, during the guided reading session, Zig's group took it in turns to read a page from a non-fiction book about animals and insects. Zig sounded out each word slowly, finding it difficult to say and blend the phonemes. Zig also looked at the pictures to try and make sense of the words. Zig was so slow sounding out that Zig could not remember the first part of the page.



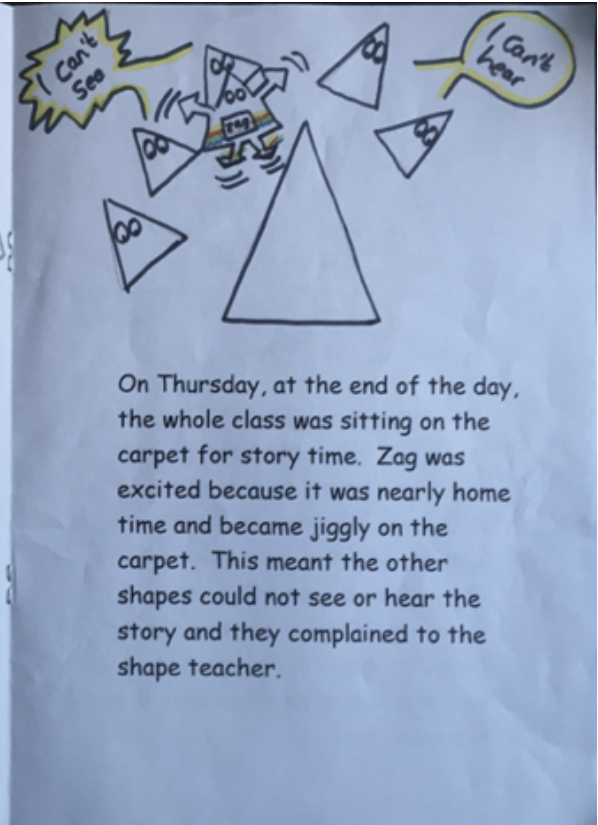
On Friday lunchtime Zig didn't follow the instructions on the Menu board for eating lunch. First, Zig should have eaten the fish, chips and peas. Then Zig should have eaten the pudding! It was yummy!

Appendices 12 – Zag’s Week at School – Year 2 book





On Wednesday Zag was busy working on an art project using charcoal. On the cartridge paper that Zag was given, Zag created different lines and crosshatched marks. Zag made these marks on another shape's work. This shape was not very pleased about this!



On Thursday, at the end of the day, the whole class was sitting on the carpet for story time. Zag was excited because it was nearly home time and became jiggly on the carpet. This meant the other shapes could not see or hear the story and they complained to the shape teacher.



On Friday it was Golden Time. This week Zag had earned enough good behaviour points to choose an activity. Zag chose to construct. Zag enjoyed this very noisily. The other shapes found this very annoying. When it came to tidy up time Zag was still playing, and refused to tidy away because it was too much fun!

Appendices 13– Adapted CATCH scales

+ P4C study highlighted yellow = revised affective and behaviour scale (to keep). Cognitive scale = remains the same

Item Number	Subscale	Original Item	Adapted Items	P4C Study – 1)Zig 2)Zag
1	Affective Negative	I wouldn't worry if a handicapped child sat next to me in class	I would worry if a disabled person sat next to me at school	I would worry if Zig and Zag sat next to me at school
2	Behavioural Positive	I would not introduce a handicapped child to my friends	I would introduce a disabled person to my friends	I would introduce Zig and Zag to my friends
3	Cognitive Positive	Handicapped children can do lots of things for themselves	Disabled people can do lots of things for themselves	Zig and Zag can do lots of things for themselves
4	Behavioural Negative	I wouldn't know what to say to a handicapped person	I wouldn't know what to say to a disabled person	I wouldn't know what to say to Zig and Zag.
5	Cognitive Positive	Handicapped children like to play	Disabled people like to play	Zig and Zag like to play
6	Affective Negative	I feel sorry for handicapped children	I feel sorry for disabled people	I feel sorry for Zig and Zag
7	Behavioural Positive	I would stick up for a handicapped child who is being teased	I would stick up for a disabled person if they were being teased or bullied	I would stick up for Zig and Zag if they were being teased or bullied
8	Cognitive Negative	Handicapped children want lots of attention from adults	Disabled people want lots of attention	Zig and Zag want lots of attention
9	Behavioural Positive	I would invite a handicapped child to my birthday party	I would invite a disabled person to my party	I would invite Zig and Zag to my party
10	Affective Negative	I would be afraid of a handicapped child	I would be afraid of a disabled person	I would be afraid of Zig and Zag

11	Cognitive Negative	Handicapped children don't like to make friends	Disabled people do not like to make friends	Zig and Zag do not like to make friends
12	Behavioural Positive	I would talk to a handicapped child I didn't know	At school I would talk to a disabled person I did not know	At school I would talk to Zig and Zag if I did not know them
13	Affective Positive	I would like <u>having</u> a handicapped child live next door to me	I would like <u>having</u> a disabled person live next door to me	I would like Zig or Zag live next door to me
14	Cognitive Negative	Handicapped children feel sorry for themselves	Disabled people feel sorry for themselves	Zig and Zag feel sorry for themselves
15	Affective Positive	I would be happy to have a handicapped child for a special friend	I would be happy to have a disabled best friend	I would be happy to have Zig or Zag as a best friend
16	Behavioural Negative	I would try to stay away from a handicapped child	I would try to stay away from disabled people	I would try to stay away from Zig and Zag
17	Cognitive Positive	Handicapped children are as happy as I am	Disabled people are happy	Zig and Zag are happy
18	Affective Negative	I would not like a handicapped friend as much as my other friends	I would prefer to have a friend who was not disabled	I would prefer to have a friend who was not Zig or Zag
19	Cognitive Positive	Handicapped children know how to behave properly	Disabled people know how to behave properly at school	Zig and Zag know how to behave properly at school
20	Behavioural Positive	In class I wouldn't sit next to a handicapped child	I would sit next to a disabled person	I would sit next to Zig and Zag
21	Affective Negative	I would be pleased if a handicapped child invited me to their house	I would be unhappy if a disabled person invited me to their house	I would be unhappy if Zig or Zag invited me to their house (round to play)

22	Behavioural Negative	I try not look at someone who is handicapped	I try not to look at disabled people	I try to look at Zig and Zap
23	Affective Positive	I would feel good doing a school project with a handicapped child	I would feel good doing a school project with a disabled person	I would feel good doing a school project with Zig and Zag
24	Cognitive Negative	Handicapped children don't have as much fun	Disabled people do not have as much fun as people who are not disabled	Zig and Zag do not have as much fun as others who are not like Zig and Zag
25	Behavioural Positive	I would invite a handicapped child to sleep over at my house	I would invite a disabled person for a sleep over at my house	I would invite Zig or Zag for a sleep over at my house.
26	Affective Negative	Being near someone who is handicapped scares me	Being near disabled people scares me	Being near Zig and Zag scares me
27	Cognitive Positive	Handicapped children are interested in lots of things	Disabled people are interested in lots of things	Zig and Zag are interested in lots of things
28	Affective Negative	I would be embarrassed if a handicapped child invited me to his birthday party	I would be embarrassed if a disabled person invited me to their birthday party	I would be embarrassed if Zig or Zag invited me to their birthday party
29	Behavioural Positive	I would tell my secrets to a handicapped child	I would tell my secrets to a disabled person	I would tell me secrets to Zig and Zag
30	Cognitive Negative	Handicapped children are often sad	Disabled people are often sad	Zig and Zag are often sad
31	Affective Positive	I would enjoy being with a handicapped child	I would enjoy being with a disabled person	I would enjoy being with Zig or Zag
32	Behavioural Positive	I would not go to a handicapped child's house to play	I would go to a disabled person's house if I was invited	I would go to Zig or Zag's house if I was invited

33	Cognitive Positive	Handicapped children can make new friends	Disabled people make friends easily	Zig and Zag make friends easily
34	Affective Negative	I feel upset when I see a handicapped child	I feel upset when I see a disabled person	I feel upset when I see Zig or Zag
35	Behavioural Positive	I would miss recess to keep a handicapped child company	At school I would miss break time to spend time with a disabled person	At school I would miss break time to spend time with Zig or Zag
36	Cognitive Negative	Handicapped children need lots of help to do things	Disabled people need lots of help to do things	Zig and Zag need lots of help to do things

Supplementary file 2: revised affective CATCH scale and scoring

I would worry if a disabled person sat next to me at school (original item 1)

Strongly disagree Disagree Can't decide Agree Strongly agree
3 2 1 0 0

I would be afraid of a disabled person (original item 10)

Strongly disagree Disagree Can't decide Agree Strongly agree
3 2 1 0 0

I would be happy to have a disabled best friend (original item 15)

Strongly disagree Disagree Can't decide Agree Strongly agree
0 0 1 2 3

I would be unhappy if a disabled person invited me to their house (original item 21)

Strongly disagree	Disagree	Can't decide	Agree	Strongly agree
3	2	1	0	0

I would feel good doing a school project with a disabled person (original item 23)

Strongly disagree	Disagree	Can't decide	Agree	Strongly agree
0	0	1	2	3

Being near disabled people scares me (original item 26)

Strongly disagree	Disagree	Can't decide	Agree	Strongly agree
3	2	1	0	0

I would be embarrassed if a disabled person invited me to their birthday party (original item 28)

Strongly disagree	Disagree	Can't decide	Agree	Strongly agree
3	2	1	0	0

I would enjoy being with a disabled person (original item 31)

Strongly disagree	Disagree	Can't decide	Agree	Strongly agree
0	0	1	2	3

Supplementary file 3: revised behavioural scale and scoring

I would introduce a disabled person to my friends (original item 2)

Strongly disagree	Disagree	Can't decide	Agree	Strongly agree
0	0	1	2	3

I would stick up for a disabled person if they were being teased or bullied (original item 7)

Strongly disagree	Disagree	Can't decide	Agree	Strongly agree
0	0	1	2	3

I would invite a disabled person to my birthday party (original item 9)

Strongly disagree	Disagree	Can't decide	Agree	Strongly agree
0	0	1	2	3

At school I would talk to a disabled person I did not know (original item 12)

Strongly disagree	Disagree	Can't decide	Agree	Strongly agree
0	0	1	2	3

I would invite a disabled person for a sleep over at my house (original item 25)

Strongly disagree	Disagree	Can't decide	Agree	Strongly agree
0	0	1	2	3

I would tell my secrets to a disabled person (original item 29)

Strongly disagree	Disagree	Can't decide	Agree	Strongly agree
0	0	1	2	3


I would go to a disabled person's house if I was invited (original item 32)

Strongly disagree	Disagree	Can't decide	Agree	Strongly agree
0	0	1	2	3

At school I would miss break time to spend time with the disabled person (original item 35)


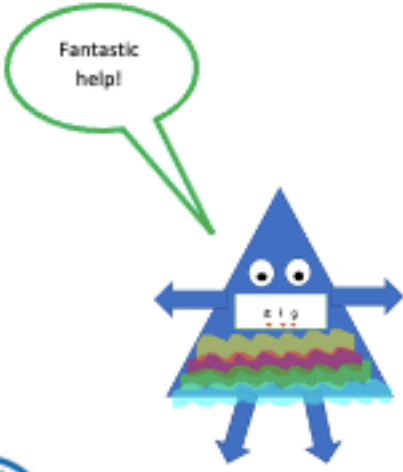
Strongly disagree	Disagree	Can't decide	Agree	Strongly agree
0	0	1	2	3


Appendices 14 – Certificate for taking part in study


THANK YOU
This is to certify that

Has been a fantastic Research Assistant for the University of York

Signed Date



Appendices 15 – Exemplar coded transcript



Session 4 : Differences from the inside or outside?

Question: Are babies different to each other when they are born or do they become different growing up?

P4C Year 5 session 4 transcription Alexandra (Coding done)

P4C Data	Coding Ideas
<p>[children getting ready for P4C session]</p> <p>T: We are going to do, very sensibly, our <u>warm up</u> – stand up and make a circle.</p> <p>[children put chairs under tables and make a circle around the room]</p> <p>T: <u>so</u> I'm going to start off with pass the smile. <u>So</u> I'm going to start off, I'm going to turn and then looking, to catch the smile and pass it on [T models].</p> <p>[children focus on passing the smile around the circle].</p> <p>T: okay, let's do it again – an even bigger smile and this time as the smile is going <u>around</u> I'm going to send a second smile, so you've really got to be looking.</p> <p>[very focussed looking and waiting for smiles]</p> <p>T: I've got one back! <u>So</u> we have to use good eye contact, good looking and we're not listening are we, but we have to focus and actually pay attention. Those people who weren't focussed lost the smiles a little bit and had to get it back [inaudible – other children talking]. Okay, sit back down again.</p> <p>[children sit back down on chairs again – T calls out names of those who are ready].</p> <p>T: <u>So</u> this afternoon we are going to be looking at the four Cs again. We are going to be thinking about caring, about what someone has to say. We're going to be creative, keeping our ideas and talk really focussed. We're going to be working together and we're going to test ideas and look for evidence. Just a little reminder of our rules <u>please</u>, <u>because</u> some of us even now are not making the right choices. Pencils down... <u>equipment</u> away.... You need to be listening to the speaker, respecting <u>each others</u> views, building our ideas. Be prepared to think even if you don't want to contribute you can still be thinking about the ideas. There is no wrong or right answer and keep those thoughts, <u>comments</u> and ideas within the session. Okay... so... think.... Can a person be perfect? [some time given to think]. Share with the person next to you.</p> <p>[children discuss ideas in pairs]</p> <p>T: Okay.... Well done The Speed Reader, well done Super Painter...</p>	



<p>[children quieten]</p> <p>Rugby Man: I don't think anybody can be perfect because you might be <u>really good</u> at a lot of things but there's always something that you're not the best at.</p> <p>Math Man: I think you can't ever be perfect because we're perfect at some stuff and then you might be <u>really bad</u> at everything else. <u>So</u> you're perfect and bad, and perfectly good at stuff. So... [inaudible].</p> <p>T: Super Artist</p> <p>T: Baller.</p> <p>Baller: erm... I don't know what's perfect and no one can be perfect at everything. But I do... I know some people who are questioning about whether Jesus Christ was perfect. I respect their opinion, but I don't agree with that I feel like Jesus had to have something he could have improved on. And.... he could have improved on everything... there's always a little thing you can do. Like your writing is never perfect.</p> <p>T: <u>So</u> we'll move on from the warm up and watch a video.</p> <p>[T puts on the video of Same but Different – Alexandra's story].</p> <p>[T: Okay so we're going to move our chairs into a sensible circle - children set up chairs around edge of classroom for session].</p> <p>T: Okay well done – let's look at the questions on the board. Okay... so, remember as this is being recorded you need to say your superhero name as well as your own name to help with the discussion. Okay... so what did you notice about the video? Super Helper.</p> <p>T: Okay, lovely, the condition that she's got is called Downs Syndrome, okay. Do you want to pick somebody?</p> <p>T: she did, didn't she, she kept persevering didn't she.</p> <p>The Acro Star: <u>well</u> I think like that those sisters, like well some people get annoyed about... cos they might... the parents might pay more attention to her... because like they understand a bit...[inaudible] who she was.</p> <p>T: <u>so</u> The Acro Star's coming from a bit of a different perspective, you're also a triplet...</p> <p>The Acro Star: triplet...</p> <p>T: <u>so</u> she also has to share time as well with her two brothers. Okay....</p>	<p>difference in abilities by task - no perfection</p> <p>difference in abilities by task - no perfection</p> <p>questions definition of 'perfect' - perfection not possible, always room for improvement (even Jesus)</p> <p>annoyance from siblings about unequal parental attentions</p>
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<p>The Acro Star: Sick Skate Boarder and Super Talker.</p> <p>T: Don't forget to hold your hand out so Sick Skate Boarder and Super Talker can see who to pick.</p> <p>T: Interesting <u>view point</u> there Super Artist, has anyone got anything to build on that?</p> <p>Rugby Man: Erm... Dyno Syndrome is one of the more common disabilities... and like Super Artist said they might have to leave her out of some games but most of the other games she will be able to join in with, but she will need a little bit of assistance. Because when I went to my Mum's work, where she works there was quite a few people with Dyno <u>Syndrome</u> and they were like... they were human... they were no different to us they... <u>its</u> just they do struggle more to do stuff because of their condition. It's harder for them because like... their brain doesn't operate in a more.... In a more.... <u>sophis</u>... like a better way of moving so that's why she <u>has to</u> get ready.... <u>Well</u> she has to get dressed by her mum because erm... when she goes in... it's hard for her and she's like.... her condition sort of stops that.</p> <p>T: <u>so</u> it makes some things more difficult for her. <u>So</u> what was the same about the sisters? Rugby Man.</p> <p>Rugby Man: they all ... even though they <u>was</u> different, they're still friends and... erm...</p> <p>T: can anyone help him out – what else was the same?</p> <p>Rugby Man: my name is Rugby <u>Man</u> and my superhero name is Rugby Man. The Acro Master.</p> <p>T: can we have some different people thinking about what was the same about the sisters.</p> <p>Rugby Man: <u>??</u>.</p> <p>T: <u>??</u>.</p> <p>??: Erm... The idea.... That even though they're all the same and some of them like the same stuff. Some of them will like other things too.</p> <p>T: on the video did it show them liking the same things or different things?</p> <p>??: <u>so</u> some of them like the same things but they might like different things as well.</p> <p>T: true!</p> <p>??: erm...</p>	<p>can't engage with all games</p> <p>assistance/ help</p> <p>People with Down's syndrome not different</p> <p>different brain functioning/ condition limits some things</p> <p>sisters as friends</p> <p>same interests</p> <p>varied interests</p> <p>same interests</p> <p>varied interests</p>
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<p>The Acro Star: Sick Skate Boarder and Super Talker.</p> <p>T: Don't forget to hold your hand out so Sick Skate Boarder and Super Talker can see who to pick.</p> <p>T: Interesting <u>view point</u> there Super Artist, has anyone got anything to build on that?</p> <p>Rugby Man: Erm... Dyno Syndrome is one of the more common disabilities... and like Super Artist said they might have to leave her out of some games but most of the other games she will be able to join in with, but she will need a little bit of assistance. Because when I went to my Mum's work, where she works there was quite a few people with Dyno <u>Syndrome</u> and they were like... they were human... they were no different to us they... <u>its</u> just they do struggle more to do stuff because of their condition. It's harder for them because like... their brain doesn't operate in a more.... In a more.... <u>sophis</u>... like a better way of moving so that's why she <u>has to</u> get ready.... <u>Well</u> she has to get dressed by her mum because erm... when she goes in... it's hard for her and she's like.... her condition sort of stops that.</p> <p>T: <u>so</u> it makes some things more difficult for her. <u>So</u> what was the same about the sisters? Rugby Man.</p> <p>Rugby Man: they all ... even though they <u>was</u> different, they're still friends and... erm...</p> <p>T: can anyone help him out – what else was the same?</p> <p>Rugby Man: my name is Rugby <u>Man</u> and my superhero name is Rugby Man. The Acro Master.</p> <p>T: can we have some different people thinking about what was the same about the sisters.</p> <p>Rugby Man: <u>??</u>.</p> <p>T: <u>??</u>.</p> <p>??: Erm... The idea.... That even though they're all the same and some of them like the same stuff. Some of them will like other things too.</p> <p>T: on the video did it show them liking the same things or different things?</p> <p>??: <u>so</u> some of them like the same things but they might like different things as well.</p> <p>T: true!</p> <p>??: erm...</p>	<p>can't engage with all games</p> <p>assistance/ help</p> <p>People with Down's syndrome not different</p> <p>different brain functioning/ condition limits some things</p> <p>sisters as friends</p> <p>same interests varied interests</p> <p>same interests varied interests</p>
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<p>Rugby Man: Baller</p> <p>Baller: my name's Baller and my superhero name is Baller. <u>Erm...</u> I feel like maybe one of the other two sisters... what they think about Alexandra is she's ... she's maybe hard to talk to or they probably think very deeply of her and <u>erm...</u> love her probably quite a bit and ... but they might feel that she's a bit overtaking when they want to do something. It's hard for them to do it without Alexandra being there. And they may feel that they're a bit left out sometimes because they <u>have to</u> do something that Alexandra does and wants to do and maybe their friends might want to play basketball. She'll have to say back to them sorry Alexandra wants to go somewhere else. <u>So</u> it'll probably make them feel a bit annoyed sometimes.</p> <p>T: Right, I think everyone can contribute to this, can we have some different hands out please? What do you think the sisters think and feel about each other? Somebody that hasn't contributed please for a while.</p> <p>Baller: The Acro Master.</p> <p>T: <u>so</u> do you think they might fall out sometimes?</p> <p>T: <u>so</u> what do you think causes differences between people? Do you have free choice in how you learn and behave?</p> <p>T: The Acro Star.</p> <p>The Acro Star: Erm... my name is The Acro <u>Star</u> and my superhero name is The Acro Star! And I think that you can't always like control like how you learn and behave because you might have anger issues and like... control it better. Erm...</p> <p>T: someone different?</p> <p>The Acro Star: Erm... <u>SuperArtist</u>.</p> <p>T: what do you mean about choose how you learn?</p> <p>T: do you want someone to help – build on your ideas?</p> <p>Rugby Man: so I think what <u>SuperArtist</u> says is that we can't grow/<u>know?</u> <u>Well</u> you kind of do and you kind of don't because if you can't... say you can choose to learn.... you can choose to learn in a certain way and pick it up fast, you can choose the learn and do that. Or you can choose to just mess about and then take a wrong path in learning. So [inaudible] and then you have a choice in how you behave and sometimes it will come back to you. <u>So</u> if I was in a lesson and I mess about and I was talking over everybody. Then I have that choice to behave that way but that would cause consequences I might not learn <u>it</u> or I might get told off for it. As if you choose to do it incorrectly then you...</p>	<p>Alexandra as hard to talk to</p> <p>sisters love Alexandra</p> <p>sometimes annoyed with her if they manage their behaviour around her needs</p> <p>not always able to control own behaviour and learning</p> <p><u>e.g.</u> anger issues</p> <p>choice to engage in learning or not</p> <p>choice over own behaviour</p> <p>acknowledgement of consequences of own behavioural choices</p>
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<p>then you can learn it and you won't have to take a load of time and don't have it repeated. <u>So</u> you can be better with whatever you need to get on with.</p> <p>T: thank you Rugby Man. [children have hands out]</p> <p>Rugby Man: Dance Drama</p> <p>Dance Drama: Erm... I don't think like you can choose because you like.... when you're born everyone is like different so one person may like <u>learn</u> really well and pick it up really quick but another person didn't choose to not! Because their brain hadn't got all the information as quickly as somebody else's did. Because everyone is different... everyone is different by their learning so like somebody would be really <u>good</u> and somebody won't be as good. <u>So</u> if you choose to do that and you may put in loads of effort and like have people helping you, but you don't choose for that to happen, you were just born like it and you can't.... You can do something to stop it... but it can't go, like even if they know I don't want you to come <u>help</u> you or no I want to like learn... I don't want any help then you are choosing that... you are choosing how you are learning. You can't choose how like... how you're supposed to learn. Erm... Sick Skate Boarder and Super Talker.</p> <p>T: We can come back to you. Another choice...</p> <p>Rugby Man: Like you sort of you make choices when you learn because you say... as you said I think I like learning with watching someone do... doing it or like erm... and about choices, when Dance Drama was saying you cannot get better... like if you're dyslexic <u>erm...</u> you can't... like you put lots and lots of effort in. You know you won't be the best in the class but... cos you've got dyslexia, but... but you can try your hardest and then you sort of.... You can get as pretty good as you can. You've got dyslexia so you won't be able to write as quick enough as <u>every one</u> else, you won't be able to read as good as everyone so... it's harder.</p> <p>T: Okay... good point.</p> <p>Rugby Man: err... Sick Skate Boarder and Super Talker.</p> <p>T: Mathematical Man?</p> <p>Mathematical Man: Kind of like what Sick Skate Boarder and Super Talker said cos I also know somebody that has a disability. But I'm not sure if it is one cos my brother has ADHD and I'm not sure if that's technically a disability. But like what Sick Skate Boarder and Super Talker said that person that Sick Skate Boarder and Super Talker knows, my brother can <u>actually do</u> the exact same thing! He used to... well now he's started getting on a bus to high school he remembers what bus is... like... in the back of his head. <u>Cos</u> he has to get the bus in the morning and at night.</p>	<p>innate differences - in ability learning struggle is not about choice</p> <p>differences in brain functioning</p> <p>despite effort, innate ability is there</p> <p>individual differences in learning ability</p> <p>make own choices in learning</p> <p>can improve with effort despite learning need, though it may be harder</p> <p>questioning the definition of 'disability'/ labelling (ADHD)</p> <p>able to learn to do things despite learning need</p>
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T: fantastic. So that was a really good session – and that’s the end.... So we’re going to do some reflection. How well did we listen to each other? Whose ideas did we appreciate and how have you been affected or moved on with your thinking? Let’s have a few ideas of how well did we listen to each other.

Rugby Man: I think we listened okay, but I think we could have listened more and get better.

T: you think we could improve?

T: yes, I agree with all the desks... a few people were distracted by the water bottles.

Mathematical Man: I really like the way The Acro Star because with the water bottles its making people not actually listen and messing around and not putting their hand out and talking about what they think.

T: okay, so some people who are really thinking and putting their hands out, some people who are thinking and not putting their hands out and some of you aren’t listening or thinking I think! Which is a shame. Who’s ideas did you appreciate? Who did you think came up with good points today? Super Artist.

T: Rugby Man who did you think made a good point today?

Rugby Man: I liked Dance Drama’s point earlier.

T: ? who’s point did you like today?

? Sick Skate Boarder and Super Talker’s.

T: what did you like about what Sick Skate Boarder and Super Talker said?

? Erm...

T: can you think of anything Sick Skate Boarder and Super Talker said that you liked?

The Ultra Reader: I think Sick Skate Boarder and Super Talker because he was really in the conversation. Like he really wanted to like express what he knew. He wanted people to really understand that he knew about that stuff. He wanted to let other people know and that’s what he’d done.

T: good sharing his ideas well. Super Reader.

Rugby Man: I thought Super Artist because erm... she gave good explanations as well and I think she has like an answer for everything. She was really engaged in the conversation.



<p>T: Lovely, and has anybody changed their thinking or moved on in their thinking? We'll go round the circle if you want to say anything put your hand out.... Anything you thought was a bit different today? Baller.</p> <p>Baller: <u>Erm...</u> what I thought was that when you have Dynamo symptom or whatever...</p> <p>T: Down's syndrome.</p> <p>Baller: Down's Syndrome er that it would be a <u>lot lot</u> harder than what it actually is. Because what I think is that Alexandra had a bit of a little dose than other people <u>cos</u> I have seen other people like... quite a bit ... like really quite affected by it. But it has really changed my thinking about what I thought that was.</p> <p>T: you are right because conditions like that can be more severe and less severe. You are right to think that some people might be more affected by Down's Syndrome. We'll carry on round our circle. Super Artist.</p> <p>T: <u>so</u> having a sister was a positive thing. Sick Skate Boarder and Super Talker.</p> <p>Rugby Man: She never really like gave up when she was trying to do stuff... like the gymnastics, she kept on going and <u>er...</u> Brownies she didn't... she didn't think she was <u>different</u> and she could do everything that everybody else did.</p> <p>T: Brilliant – thank you.</p>	<p>altered opinion from session</p> <p><u>reevaluation</u> of Down's syndrome as less limiting than presumed</p> <p>variety of people with Down's syndrome</p> <p>Alexandra's self-belief that she wasn't different</p> <p>Alexandra able to do everything she wanted</p>
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Appendices 16 – Ethics Form



Education Ethics Committee Ethical Issues Audit Form for Research Students

This questionnaire should be completed for each research study that you carry out as part of your degree.

Surname / Family Name:	Fields
First Name/ Given Name:	Diana
Programme:	PhD Education
Supervisor (of this research study):	Dr Asbury
Topic (or area) of the proposed research study:	
Can a short P4C intervention change how children perceive others with special educational needs, and are effects maintained over time?	
Where the research will be conducted:	
At a two-form entry primary school – EYFS, Year 2, Year 5	
Methods that will be used to collect data:	
Qualitative audio recording of P4C sessions Pre, Post and Post (delayed) measures (responses to questions will be collected face to face) CATCH questionnaire measures – Year 2, Year 5	
If you will be using human participants, how will you recruit them?	
Recruitment of school Opt in consent letters	

Supervisors, please read *Ethical Approval Procedures: Students*.

The application is a joint one by the research student and supervisor(s). It should be submitted to the TAP member for initial approval and then to the Higher Degrees Administrator who will seek a second opinion from a designated member of Education Ethics Committee. Forms may also require review by the full Ethics Committee (see below).

First approval: by the TAP member (after reviewing the form):

Please select one of the following options.

I believe that this study, as planned, meets normal ethical standards. I have checked that any informed consent form a) addresses the points as listed in this document, and b) uses appropriate language for the intended audience(s).	<input checked="" type="checkbox"/>
I am unsure if this study, as planned, meets normal ethical standards	<input type="checkbox"/>
I believe that this study, as planned, does not meet normal ethical standards and requires some modification	<input type="checkbox"/>

TAP member's name (please type):	Lynda Dunlop
Date:	27 March 2019

Second approval: by a designated Ethics Committee member:

Please select one of the following options:

I believe that this study, as planned, meets normal ethical standards. I have checked that any informed consent form a) addresses the points as listed in this document, and b) uses appropriate language for the intended audience(s).	<input checked="" type="checkbox"/>
I am unsure if this study, as planned, meets normal ethical standards	<input type="checkbox"/>
I believe that this study, as planned, does not meet normal ethical standards and requires some modification	<input type="checkbox"/>

Name of Ethics Committee member (please type):	Sally Hancock
Date:	30/03/2019

Appendix 17 - Abbreviations

P4C	Philosophy for Children
CATCH	The Chedoke-McMaster Attitudes Towards Children with Handicaps Scale
GPS	genomewide polygenic scores
DNA	Deoxyribonucleic Acid
ASHG	The American Society of Human Genetics
ACMG	American College of Medical Genetics and Genomics
EA3	Educational Attainment 3
ELSI	National Human Genome Research Institute, Ethical, Legal and Social Implications Research Program
SEND	Special Educational Need and Disability
SAPERE	Society for the Advancement of Philosophical Enquiry and Reflection in Education
ASD	Autism Spectrum Disorder
ADHD	Attention Deficit Hyperactive Disorder
T2D	Type 2 Diabetes
EIF	Education Intervention Foundation
AS	Asperger Syndrome
IAPC	Institute for the Advancement of Philosophy for Children
CoI	Community of Inquiry
FSM	Free School Meals
ASN	Additional Support Needs
EQ-i	Emotional Quotient Inventory
EYFS	Early Years Foundation Stage
DfE	Department for Education
EPPE	The Effective Provision of Pre-school Education project
RCT	Randomised Control Trial
SENDCo	Special Educational Needs and Disability Coordinator
OSF	Open Science Framework
ANOVA	Analysis of Variance
ANCOVA	Analysis of Covariance
MAR	Missing At Random
EEF	Education Endowment Foundation
GOALS	GenOmics And Life Stories
CAT	Cognitive Abilities Tests

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